FACEBOOK AS SCRAPBOOK

SAMSUNG'S GALAXY TAB GOES BUDGET

ANOTHER 'ONE' FROM HTC

THE SECOND COMING OF HTC'S TITAN

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042012 #37

MAN AND MACHINE

MICROSOFT'S BILL BUXTON ON THE FUTURE OF THE NATURAL UI

DISTRO Issue #37...

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Cover Illustration by Sean McCabe

Nokia Still Suffering, Space Shuttle's Final Flight

Editor's Letter

Back to civilization for me this week, and back to the bad news for Nokia. The company posted its Q1 2012 financials and I'm struggling to find a positive spin. Sales totalled $9.7 billion, down from $13.6 billion a year ago, resulting in a $1.7 billion loss for the quarter. Much of that was due to one-time restructuring costs that shouldn't plague the next quarter, but with only $6.3 billion left in liquid assets, the company's fortunes need to change quickly or it's liable to find itself on the acquisition block.

Microsoft would be a likely suitor, and that company took the time this week to clarify what its Windows 8 offerings will be called. The standard x86 version for desktops and laptops will just be called Windows 8 while a more enterprise-friendly version (with virtualization, encryption, etc.) is Windows 8 Pro. The big change comes in the ARM flavor, now dubbed "Windows RT," seemingly with no indication of the number eight. A fresh new beginning, then?

ASUS released details of its long-promised GPS dongle for the Transformer Prime, formally titled the GPS Extension

Kit. The first images released this week show a thing that's larger than expected, sadly preventing use of the keyboard dock while it's attached. So, road-trippers, you can find out how to get where you're going or have the battery life to actually get there. Your choice.

Space Shuttle Discovery made its final flight, affixed rigidly to the back of a Boeing 747 and carried to its final resting place, the National Air and Space Museum near Dulles. Along the way, it cruised at just 1,500 feet above our nation's capital, creating one hell of a sight for locals. Those of us who sadly found ourselves elsewhere were stuck watching #spottheshuttle on Twitter. Living vicariously is, thankfully, easier than ever.

The Shuttle is gone, but Tupac is back, virtually resurrected for a pseudo-holographic performance at the Coachella festival. It was actually just a life-size reflection on a piece of glass, a decidedly old-school technique but an effective one that wowed the audience and led to claims that the getup might actually go on tour. The very idea seems preposterous — until you stop to think about the millions who pay good money to watch random pop artists lip-sync their way

The Shuttle is gone, but Tupac is back, virtually resurrected for a pseudo-holographic performance at the Coachella festival.

from one arena gig to the next.

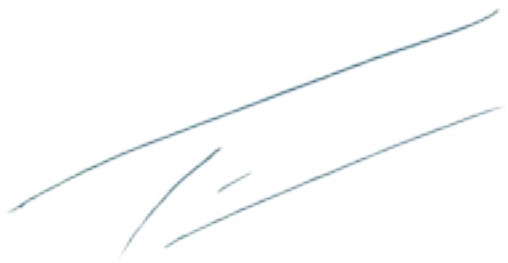
Read It Later, the popular "I don't have time for this right now" aggregation service, got a new name that better reflects its increasingly non-textual use. The new Pocket app pulls together articles and videos into a pleasant, offline experience — but sadly reading is still all you can do without a connection. Videos are only available when you're connected, but if that makes you sad please take solace in the new, low price. It's free.

Facebook's "Listen" button found a home on the pages of many music artists, finally taking the social network into a place where MySpace is still quite successful. But, unlike that former social network, Facebook isn't actually embedding anything on those pages. Clicking Listen just launches your music streamer of choice, whether it be Spotify, MOG, Slacker Radio or Rdio. Pick your favorite and Facebook will remember it, just like it remembers your birthday and former spouses and lots of other fun facts you've shared over the years.

Oakley, apparently sick of hearing about Google's Project Glass, indicated that it too is working on devices in the soon-to-be-burgeoning field of intelligent eyewear. CEO Colin Baden said he's been fiddling with various prototypes since way back in 1997, when Eye Jackets were all the rage, but hasn't quite found the magic formula to bring it all together yet. When Oakley does, Baden assured the world that its glasses will be far more aesthetically appealing than the competition's.

Finally, a few phones heading to a few new places. T-Mobile confirmed it's getting the HTC One S, a solid smartphone that doesn't seem to be quite worth the $200 on-contract the carrier is asking for it. For that money you could get the superior-in-every-way One X on AT&T. Or, you could get the still-rather-hot Galaxy Nexus on Sprint on April 22nd. Those who don't mind giving their financial details to Google Wallet will get an extra $50 in funny money to play with.

In this week's Distro we have an exciting addition to the mix, a new column from Joystiq Editor-in-chief Ludwig Kietzmann! For the first Reaction Time he'll be looking at what happens when mouthy gamers get their say. Darren Murph explores Facebook's true value, Ross Rubin continues his discussion on the wondrous repercussions of smartphonedom and Microsoft Principal Researcher Bill Buxton tells us about the future of NUI. We have our first impressions of the glowy Nook and Canon's EOS-1D C, reviews of HTC's One V and Titan II, plus Samsung's 7-inch Galaxy Tab 2. There's more recommended reading, a new IRL, a Q&A with DigitalRev's Kai Man Wong and, finally, a graphical look from Box Brown at what some Angry Birds Space meetings might have looked like. But don't take my word for it, get to swiping!



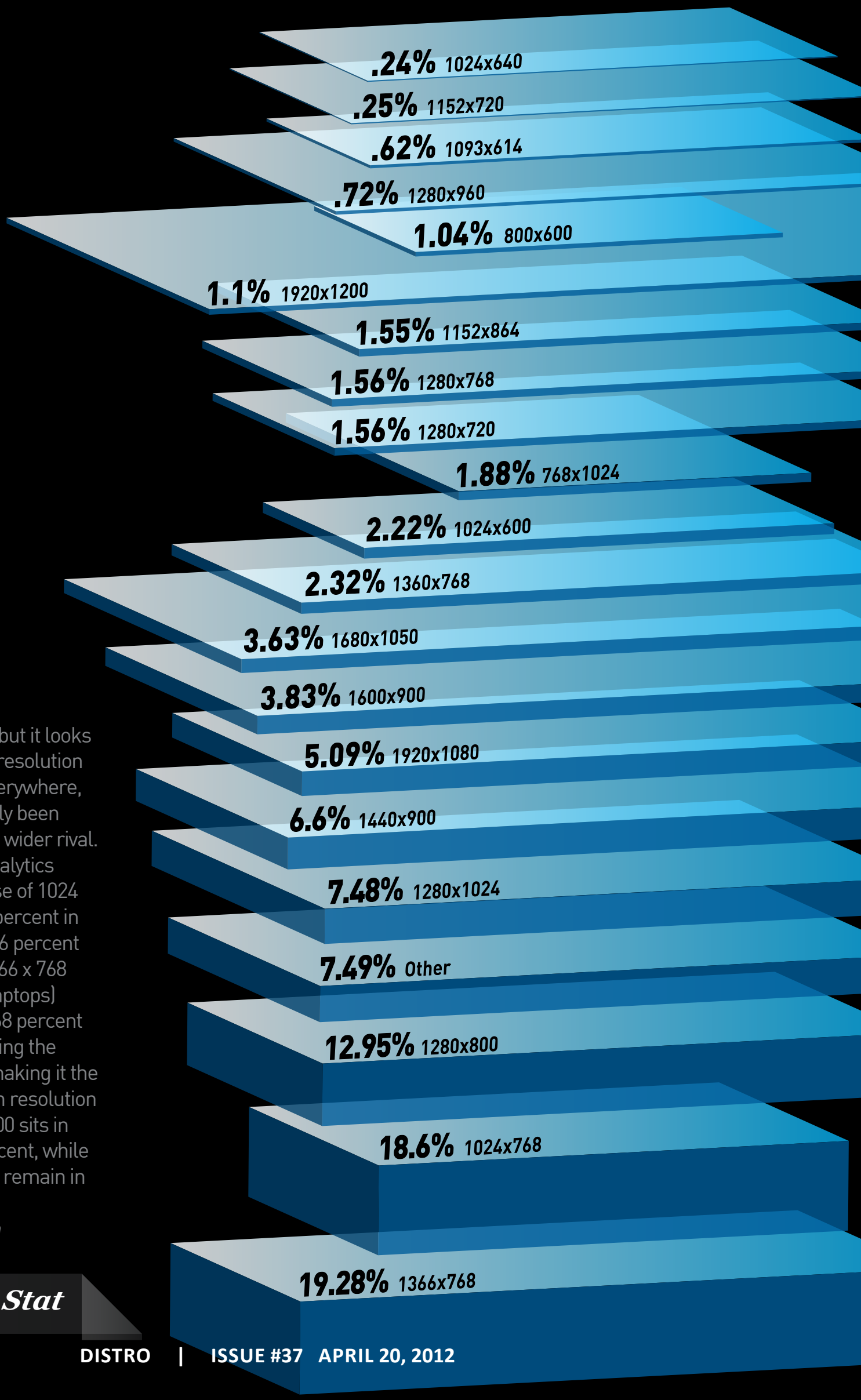
TIM STEVENS
EDITOR-IN-CHIEF,
ENGADGET

A World Gone Wide

It's had quite a run, but it looks like the old standby resolution of web designers everywhere, 1024 x 768, has finally been eclipsed by a newer, wider rival. According to web analytics firm StatCounter, use of 1024 x 768 fell from 41.8 percent in March of 2009 to 18.6 percent this March, while 1366 x 768 (common to many laptops) shot up from just 0.68 percent to 19.28 percent during the same time period, making it the most popular screen resolution worldwide. 1280 x 800 sits in third place at 13 percent, while all other resolutions remain in the single digits.

— Donald Melanson

SOURCE: STATCOUNTER



WHEN THE SMARTPHONE GIVETH, PART 2

Switched On

BY ROSS RUBIN

Last week's Switched On discussed the Slacker Portable, Sony eMarker and TrafficGauge, three dedicated devices that didn't make it, but saw their functionality ultimately realized via smartphones. But there have been other ideas for which the idea ultimately proved popular as smartphone bits rather than separately packaged atoms.

Kodak EasyShare Picture Viewer

Compared to some of the devices in this and the previous Switched On, the idea of a portable digital picture viewer — essentially a pocket-sized, battery-powered digital picture frame with a smartphone-sized display — has been relatively successful. In addition to the Kodak product, which required the company's software for optimal photo transfers, companies such as HP and Brookstone have dabbled in this market, and a recent glance behind the cashier counter at a local drug store revealed one by Smartparts, which sells the devices via Amazon.

It's easy to see how these simple digital "brag books" might be favored by grandparents that don't otherwise see the need for a Droid, Lumia or Galaxy device, but clearly this niche category has been dwarfed by smartphones, many of which can show at least one photo of your precious without even unlocking the screen.

Modo.net

In the days when the Vindigo city guide was a killer app for Palm PDAs, a startup with the strange name of Scout Electromedia sought to upstage it with an inexpensive hipster-targeted pocket device that provided up-to-the-minute updates on goings-on about town. The oddly shaped Modo came in a few color combinations and included a small monochrome LCD protected by a silicone cover that could be tucked behind the device when in use. Like the TrafficGauge discussed in last week's Switched On,

Ross Rubin (@rossrubin) is executive director and principal analyst of the NPD Connected Intelligence service at The NPD Group. Views expressed in Switched On are his own.

Modo spent big on billboards in launch cities... but you might have missed its window of availability if you blinked.

data for the Modo arrived via the paging network. Unlike the TrafficGauge, the lifetime service was free (as was the monthly fee for the lifetime service).

Alas, it wasn't much of a lifetime. Modo spent big on billboards in launch cities like New York and San Francisco, but you might have missed its window of availability if you blinked. The service shut down within a few months of launch, creating a smattering of colorful LCD-equipped paperweights. These days, any number of mobile apps and websites can provide updated info on events and hotspots. The Local Scout app on Windows Phones is among those that best carry on its spirit.

Smart Display

While the connectivity, ubiquity and carrier subsidization of smartphones make them a triple threat, tablets have also had an impact on several device types that attained a degree of traction, such as netbooks and e-readers. But, as with the smartphone, there's at least one failed product that has seen a kind of second life on tablets.

Hailing it as the future of the (small) monitor whereas tablet PCs were the future of the notebook, Microsoft introduced Smart Display in 2002 and killed it less than a year after the first models shipped. The Smart Display was a tablet-like device complete with a (resistive) touchscreen designed to enable wireless control of a Windows PC within the home. It provided this functionally, if not impressively quickly, using Microsoft's Remote Display Protocol over the slower WiFi networks available at the time. Portending a dilemma faced even on today's tablets, ViewSonic, an early supporter, offered a (wired) keyboard for its two models. Like any new technology, Smart Displays had their share of quirks, but what really made them dead on arrival was their $1,000+ price.

These days, a number of free tablet apps can essentially turn any iPad or Android tablet into a functional Smart

Display for Windows PCs or Macs. However, these tablets, particularly when combined with cloud storage services such as Dropbox or a product such as PogoPlug, can themselves more conveniently handle many of the tasks that justified remotely connecting to a PC. The posthumous victory of the Smart Display concept, then, is only a partial one. Were the desktop monitor market not being assailed by all-in-ones, notebooks and tablets, it might be interesting to see something like an Android-powered monitor that could be used without necessarily turning on the PC.

Had more of these devices survived long enough to see today's adoption of smartphones and tablets, the older products surely would have been vanquished by today's diversified devices that are faring so well against products that have been far more popular. Today, any company thinking of producing a new kind of digital device must seriously consider the risk that such a product's functionality can be matched by smartphone-resident apps and a potential accessory (a lesson more recently learned by mobile e-mail appliance maker Peek, which has refocused its business on software and cloud services for other handsets).

It's a tall enough hurdle that we may not see many try. Indeed, these smartphone-competitive portable gadgets may have hit the pavement, but they may have been among the last to make it through the launch window before it closed forever.

Smart Displays had their share of quirks, but what really made them dead on arrival was the $1,000+ price.

On top of a specially modified Boeing 747, Space Shuttle Discovery enjoys one last sunrise as it departs Florida's Space Coast. Discovery flew more missions than any other Shuttle, including both Return-to-Flight missions following the Challenger and Columbia tragedies. Photographed at Satellite Beach on 4/17/2012 at 07:12 am

Photo: Jeff Fink / Finktel Jr Productions

FACEBOOK: DIGITAL SCRAPBOOK FIRST, SOCIAL NETWORK SECOND

Editorial

BY DARREN MURPH

Darren holds the Guinness World Record for being the most prolific professional blogger on planet Earth. He's also an argonaut.

I never wanted to join Facebook. I never wanted to join anything online, really. I was coerced into creating a Xanga at some point, and eventually — when Facebook opened up to NC State email addresses — I begrudgingly created an account there, too. I had a "thing" about opening my life up to the internet. I knew already that prospective employers would inevitably go digging through shots of me celebrating at an NCSU basketball game and spike my resume in the trashcan beside his or her UNC degree. More than anything, though, I just didn't care what anyone else was doing. I kept a handful of comrades close to my chest, and everyone else was a mere acquaintance. At the time, I blamed it on the 21 hours of courses I was taking entirely on Tuesdays and Thursdays — who has time for online networking when you're in an educational torture chamber? — but now I realize the truth: I never wanted Facebook to be a social network.

Is:

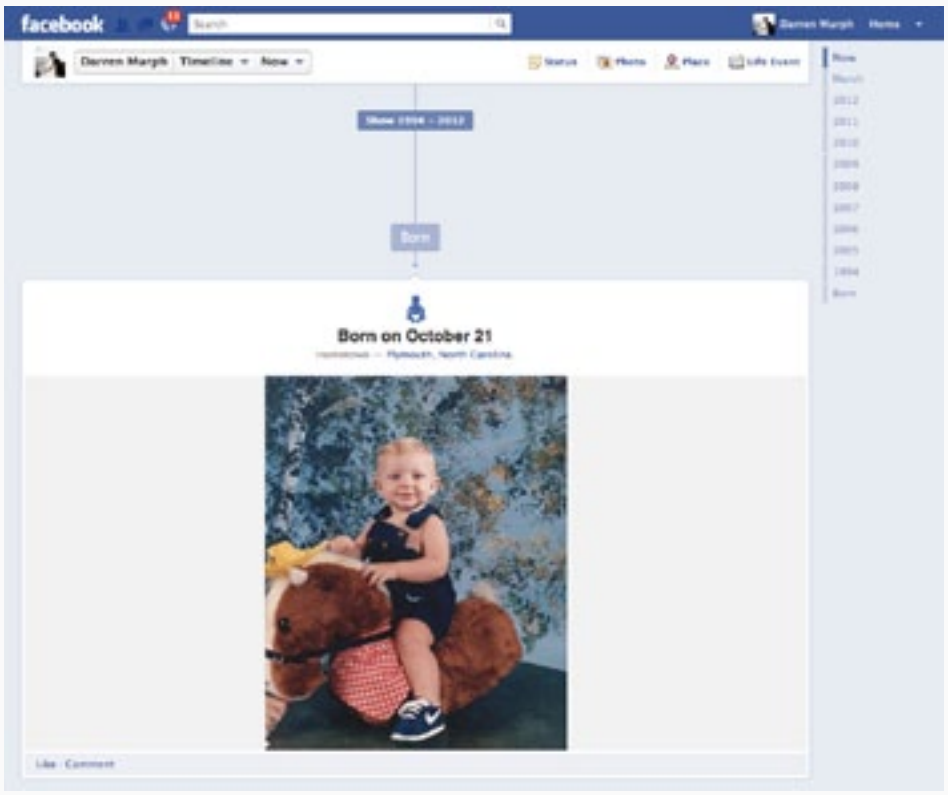
It's kind of amazing that it took Facebook as long as it did to realize that not every sentence spoken on a social network needs to start like this: [NAME is]. I vividly recall awkwardly phrased statements that were glaring examples of how unnatural it was to use. Things like: "James is so amped that he just saw The Blair Witch Project!" and "Kevin is so loving this ice cream!" For whatever reason, it seemed that the primary thing that people

turned to Facebook for (status updates) was the thing I was least interested in. And not a thing has changed in seven years.

Timeline

I joined Facebook on April 20, 2005. I know that because Facebook remembered it for me. And that, friends, is where the true magic of Mark Zuckerberg's network lies. To me, Facebook's most polarizing overhaul finally takes the service to a place that I had always wanted it to be; not because I had grand ideas about how it should service its increasingly growing customer base, but because — selfishly — the Timeline essence of the product was the only thing that really mattered to *me*. Millions upon millions of users later, it feels to me that Facebook has finally made the social network personal.

Allow me to explain. To date, I have 257 friends on Facebook. I couldn't tell you how many of those are "active" if you nestled a Colt .45 upside my melon, and I still don't visit the site explicitly to see what all of 'em are up to. The beauty of having Facebook friends that match your actual life is all spelled out in the art of tagging. If you're confused — well, let's just say I've spent more time treating Facebook as a digital scrapbook than a social network.



Facebook, to me, isn't about today. It's about the future, looking back.

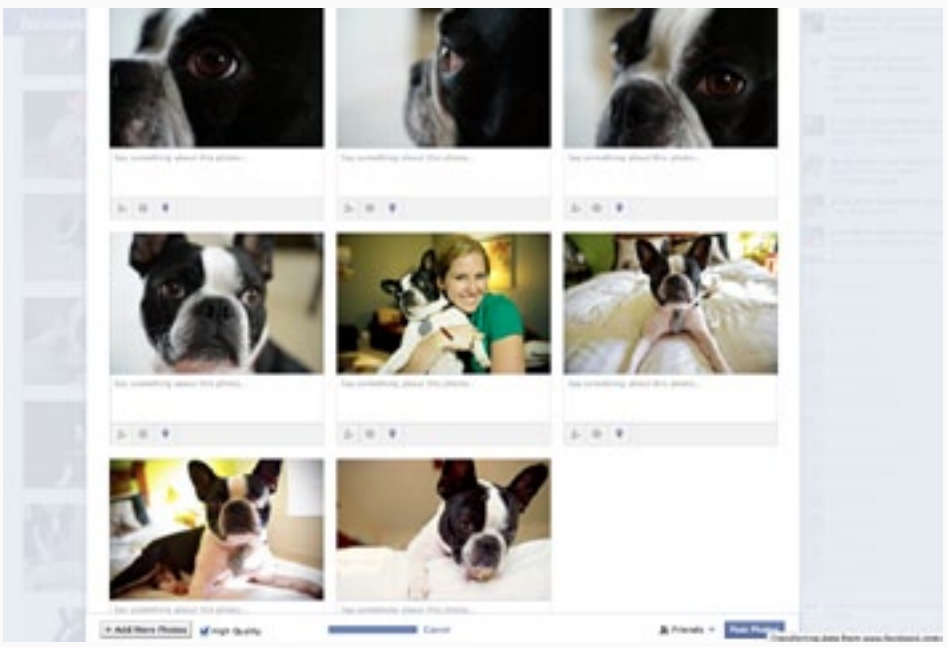
I'll be the first to admit that having friends makes the entire Timeline experience that much more enriching, but — in my view — it's predominantly because those very friends are actually helping me flesh out something. Helping me to *create* something that's larger than today. You see, I'm pretty big on capturing moments. Mostly, it's photos. I'll drag a monstrous D3S to the most inconvenient of places just to ensure I get a solid gallery of memories to take back with me, and given that I've traversed all 50 U.S. states and a few dozen countries, photos will be vital to helping me keep track of what I did when I was 27, looking back from 55. But other things are

important, too. Let's just call these "Life Events." You know, the day you splurged on that vehicle you always wanted, or the day you purchased a new home. Or, the day you quit one job and started another. Heck, I've not only found Timeline's memory of these things useful for my own personal satisfaction, but for things like loan applications.

My Own Personal Memory Book

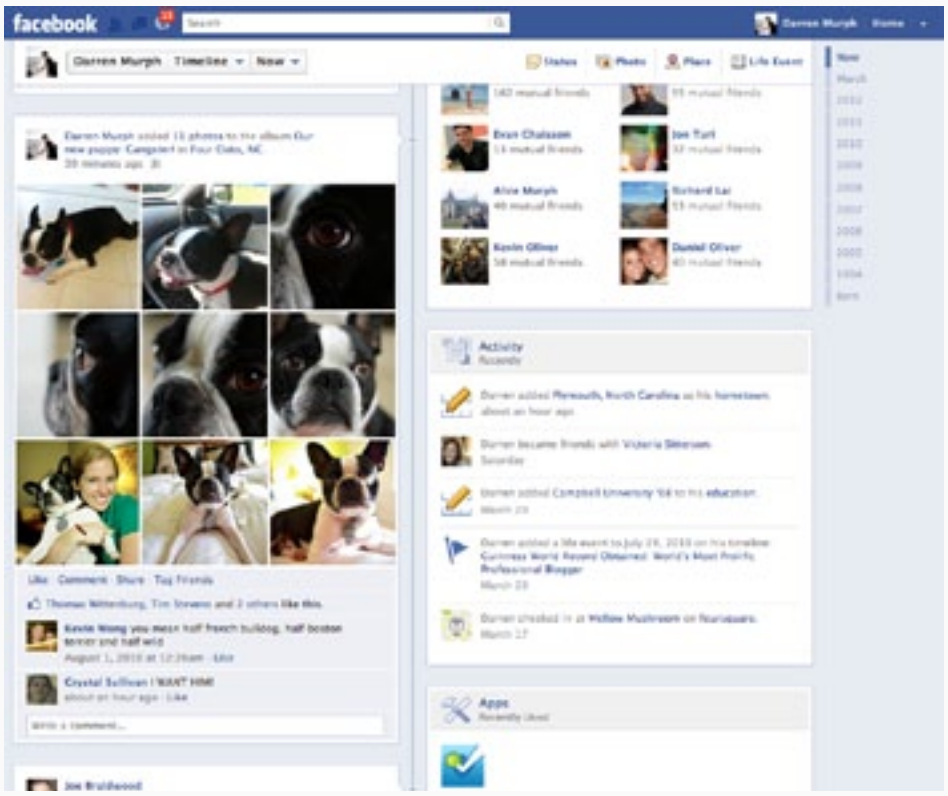
It all culminates into something that I view as even more powerful and significant than a social network. It's more than sharing cat videos. It's more than telling people where you're eating. It's a never-ending stream of recorded information about what I call life, pinpointing moments in this walk that would otherwise be whisked away like dust in the canyon. To me, uploading images (and tagging their locations and dates) is a surefire method to provide myself with fond memories to look back on, to cherish. Tagging friends is just another play that enriches the result even further. Put simply, I'm using Facebook as a singular portal to remember things that I will eventually want to remember about life. Facebook, to me, isn't about today. It's about the future, looking back.

Here's an example: a few weeks ago, my brother-in-law busted out his (admittedly dusty) Nintendo 64, and we engaged in quite a few rounds of Mario Kart 64. A simple smartphone capture of the loading screen, along with a tagged date and location, was enough to staple a digital sticky note onto that day. It's a day that I'm sure I'll look back on fondly. I've spent the past eight months of my life writing my first book (*iPad Secrets*, for those curious), and that gaming session marked the first time in nearly a year that I actually had enough time to put down the keyboard and pick up a worn, faded controller. It all sounds forgettable to everyone but me, but that's precisely the point. The blur of status updates from those close to me never hit home, but when I myself look back on that N64 photo, I'll remember the inner freedom and unbridled relief that I felt. I'll remember what that session *symbolized*. I'll remember just how badly I had longed for one single hour of spare time, only to finally have it. That photo probably caused my more serious friends to roll their eyes; when I look back on it, I'll remember that it was cause for inner celebration. That's power.



Writing Stories

In a sense, JPEGs and MOVs are my brush, and Timeline is my slate. I'm writing my stories on a scroll that only gets longer with each passing day, and I'm already envisioning how it'll become more important to me the older I get. But this story is hardly about me; it's about the journeys that people are journaling every day on Facebook. We're in this strange in-between era, where my grandparents want nothing more than to gather around the same box of photos each holiday season to tell stories, while I want to fire up a projector and sift through the past 365 days of my Timeline. I no longer value the stagnant nature of the photo box, and my grandparents don't understand what the internet is. But we're close — we're almost there. Almost to a point where I will be the grandparent, longing to look at the Timeline of some youngster that I've adopted or otherwise ran into. That's powerful. A single, universally accessible portal that tells one's life story, beautifully arranged in the order that one's life was lived.



In a sense, JPEGs and MOVs are my brush, and Timeline is my slate.

My Only Regret

I frequently hear older, wiser folks speak to me about things they regret from their past — in most cases, it's *not* spending money when they should have, or spending too much when they *shouldn't* have. At any rate, my only real gripe with Facebook's Timeline is that it wasn't available in the 1980s, and that my parents didn't create an account for me upon birth. As it stands, there's a cavernous gap between the day I was born and the day I joined, and it'll probably be a few decades before I have time to go back and fill it all in. So, kiddos born today and reading this in the archive stack at your local dentist — cherish your Timeline. You've no idea what a solid your folks did you when they uploaded that video of you bawling straight out of the womb.

HANDS-ON

Our firsthand impressions of just-announced and soon-to-be-released devices

BARNES AND NOBLE NOOK SIMPLE TOUCH WITH GLOWLIGHT

PRICE $139
AVAILABILITY May 2012

THE BREAKDOWN A lights-out e-reader with a $140 price tag and half the battery life of its predecessor.

What's America's number one problem in the bedroom? Whatever you guessed is probably the right answer. For the sake of this conversation, however, let's just assume that it's light. People are keeping their partners awake at all hours by leaving the light on as they finish that Stieg Larsson novel. There's got to be a better way! As the rather clunky name suggests, the Nook Simple Touch with GlowLight adds a night light of sorts to the e-reader experience. Beyond that, it's the price ($40 more), weight (five percent lighter) and battery life (cut in half in GlowLight mode) that set it apart.

CANON CINEMA EOS-1D C

PRICE $15,000
AVAILABILITY 2012

THE BREAKDOWN With less than a year in the motion picture market, Canon returns with a rather pricey 4K shooter.

The Cinema EOS-1D C marks the most drastic departure to date from the C300, which launched last November at Paramount Studios. It was there that we were first saw the 1D C prototype. Now the (relatively) compact camera is making its return, in more polished form. Like the 1D series bodies, including the yet-to-ship EOS-1D X ($6,800), the C model is a very capable still shooter. It also brings 4K capture to the table and a far heftier price tag than its counterpart. At $15,000, it likely won't be a go-to for most photojournalists, but for deep-pocketed professionals with a need for 4K clips, it may be worth it.

COWON PLENUE Z2

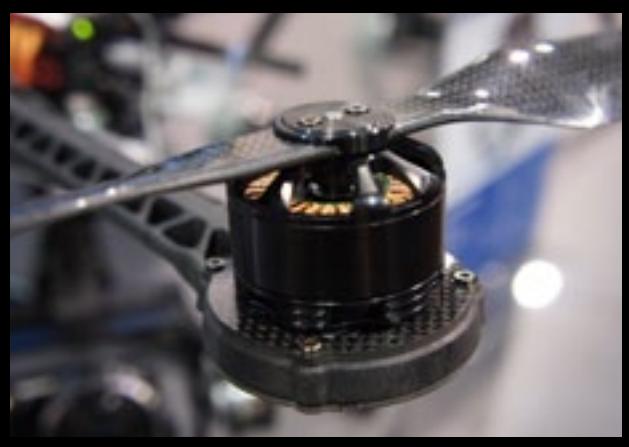
PRICE $280 (16GB) to $320 (32GB)
AVAILABILITY Early May 2012

THE BREAKDOWN This Android-packing media player costs $20 more than its closest competitor, but can't be beat in terms of audio.

Set to hit the US next month, Cowon's Plenue Z2 portable media player packs Android 2.3.5, a 3.7-inch capacitive touch-panel and superior sound quality, but there's no question that the price tag will frighten off all but the most serious audiophiles. The gap isn't as large as it once was, but a 32GB Plenue Z2 is still $20 higher than a 32GB iPod touch, and Samsung's new Galaxy Player 4.2 will soon sell for just $200. That said, we'd rate Cowon's audio quality, file support and battery life higher than either of those rivals; if your priorities are arranged as such, you'll find lots to love come May.

DJI SPREADING WINGS S800 + RULING VIDEO

PRICE $8,500 (Aircraft), $5,000 (Controller)
AVAILABILITY May 2012 (Aircraft), TBD (Controller)



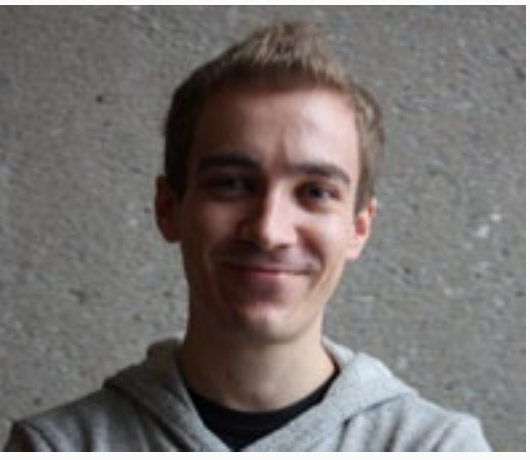
THE BREAKDOWN
DJI's Ruling is a next-level remote control for low-cost aerial photography.

Shenzhen-based DJI Innovations was on hand at NAB to demonstrate its new hex-rotor aircraft, designed to provide photographers (and videographers) with a low-cost tool for capturing aerial images. The Spreading Wings S800 was mounted with a Sony NEX-5N, which, along with the aircraft itself, we manipulated with a prototype version of the LCD-packing Ruling video controller. We found the combo responsive and accurate, and while the live video feed cut out due to an overabundance of wireless connections in the area, the S800 stayed afloat. At an estimated total of $13,500 (camera not included) the pair won't come cheap, but we certainly enjoyed the ride.

joystiq

RISE OF THE FUND-IT PUNDITS

Reaction Time



BY LUDWIG KIETZMANN

Ludwig Kietzmann is the Editor-in-Chief of Joystiq.com. He's been writing about video games for over 10 years, and has been working on this self-referential blurb for about twice as long. He thinks it turned out pretty well.

In 1998, Tim Schafer asked the world to buy his darkest, funniest and greatest graphic adventure, *Grim Fandango*. Players planet-wide gave a big ol' shrug, despite the impassioned clamor of genre buffs and the constant yelling of critics, who could only find so many synonyms for "masterpiece." ¶ In 2012, Tim Schafer asked the world to give him $400,000 for a new point-and-click project, which had yet to be designed, documented or even described. This time, he got over $3.3 million. ¶ This stratospheric level of success on Kickstarter, a venue for crowd-sourced funding that's now being directed at unconventional games, is not the norm. Tim Schafer and his Double Fine studio are in the midst of a perfect storm of publicity. The designer's cherished legacy, and his perceived role as the charming genius who just can't catch a break in a harsh industry, are the components of a great underdog story. And maybe lifelong *Grim Fandango* guilt is the glue that holds it all together.

The early success of Kickstarter games must seem intoxicating to both designers and fans, who now find support and power for ideas that can't thrive in a mega publisher's catalogue of shooters. We've seen groups embark on elaborate campaigns to resurrect their favorite television shows after a TV exec started swinging the axe, but even those are weaker gestures compared to Kickstarter. It facilitates an easy and variable financial contribution to creators. If your money gives impetus to relatively obscure revisitations like *Wasteland 2* and

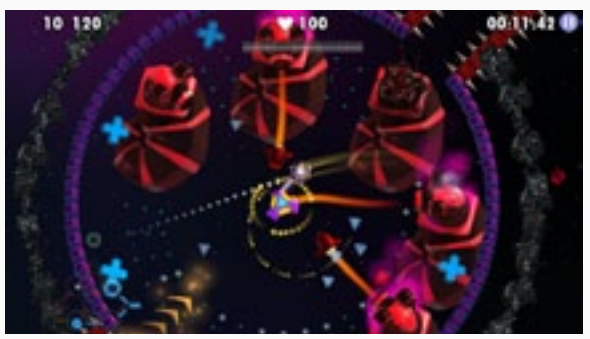
Shadowrun Returns, you have some crazy power.

Here's where things get tricky. Kickstarter is a truly groundbreaking venture within the games industry because that power is shared, it's a collaboration between creators and fans. For *Double Fine Adventure* which will set the structure of many Kickstarters to come, some backers will be able to offer design input as the game takes shape. The relationship between player and creator is altered, as is the transaction between customer and product. It's not the same as a pre-order, and a Kickstarter funder gradually becomes more invested beyond his fiscal contribution.

Double Fine designers have a vision for these projects, and creative ownership, but have formally promised to at least consider an outside perspective. The danger lies in how the two-way discussion dips into a different vocabulary on each side. Designers rely on artistry, technical knowledge and experience to convey their viewpoints, while players have to find expression in how they interact with someone else's work (they're more likely to view points, you might say). When it comes time to deliver actionable feedback, are players able to describe why they don't like something? What's wrong or right with the "feel" of a jump, or the look of a character, or the logic of a puzzle? Are designers able to accept those comments, and determine who really knows best, and when? It would be a fascinating dialogue, if it weren't

5 NEW RELEASES FOR THE WEEK OF APRIL 16TH

The Witcher 2: Assassins of Kings Enhanced Edition
(PC / Xbox 360) $60



StarDrone Extreme
(PlayStation Vita) $4

Disgaea 3: Absence of Detention
(PlayStation Vita) $40

for the internet's tendency to turn everything into a shouting match.

As BioWare is now learning, things can get pretty loud out there. Many players felt the conclusion to *Mass Effect 3* as something downright injurious, as a bitter end to a journey that spanned three games, hundreds of hours and, lest anyone forget, 180 dollars. It's hard to separate the silent majority from the socially embedded, caustic minority, but it doesn't really matter. Everyone can have a megaphone, and they're free to join the discussion whenever they please, whether they're hostile, understanding or just there to drop in a TL;DR.

In the case of *Mass Effect 3*, some players feel like their investment in an authored universe didn't pay off. Now, imagine how that scenario can balloon when the investment has an early financial component, is transparently integrated into a product over a period of months and — in the case of Double Fine — then even claims to give you a hotline to the developer. What happens when the game you backed isn't the one you expected to get?

"IT WOULD BE A FASCINATING DIALOGUE, IF IT WEREN'T FOR THE INTERNET'S TENDENCY TO TURN EVERYTHING INTO A SHOUTING MATCH."

The question of "value" becomes nebulous with a wildly successful Kickstarter, which suggests that diplomacy may be more crucial than the game design. The game will have to be well made and judged on its own merits, but there needs to be a method (or, you know, a person) to manage expectations, translate feedback between players and creators and generally keep the realities of development front and center. The fallout from a massively backed but mismanaged Kickstarter game will be a nasty matter for public relations, and that's something even big publishers can struggle to get right.

Insanely Twisted Shadow Planet
(PC) $15

Trials Evolution
(Xbox 360) $15

Valve: How I Got Here, What It's Like, and What I'm Doing

by Michael Abrash
Ramblings in Valve Time

"It all started with *Snow Crash*." So begins one of the more fascinating looks inside a technology company, from someone on the inside, that we've seen in some time. In this case, that company is Valve Software, it of the Steam platform and Half-Life games, and our guide is Michael Abrash, who details how he came to Valve, what it's like to work there, and what he's working on now. Abrash broke a bit of news with that last part — revealing that he's working on a wearable computing project — but the entire piece is a must-read whether you're interested in the gaming business or the technology industry in general. Naturally, it ends with a recruitment pitch — we're guessing he's gotten plenty of responses.

AROUND THE WEB

The Myth of Cyberspace
by PJ Rey, *The New Inquiry*

Speaking of *Snow Crash*, this piece by PJ Rey for *The New Inquiry* examines how science fiction has helped us imagine the internet and cyberspace, and argues that we may need some new myths to better represent the current web.

The Most Dangerous Gamer
by Taylor Clark, *The Atlantic*

A portrait of indie game developer Jonathan Blow (of *Braid* and the forthcoming *The Witness*), who's earned the title of the piece, Clark suggests, by challenging the current gaming conventions and replacing them with something more thoughtful and artful.

Going Digital
by Gendy Alimurung, *LA Weekly*

The transition from film to digital may seem inevitable for some, but as this piece shows, there are still plenty of folks fighting the change — including director Christopher Nolan, who's become a tireless advocate for the virtues of 35mm film.

What Amazon's eBook Strategy Means
by Charlie Stross, *Charlie's Diary*

Apple may have found itself the target of a DoJ lawsuit over e-book price fixing, but science fiction author Charlie Stross argues that we should also be concerned about Amazon's place in the industry, and offers a few suggestions for the company's competitors.

The Jig Is Up: Time to Get Past Facebook and Invent a New Future
by Alexis Madrigal, *The Atlantic*

The technology industry may not have exactly run out of ideas, but Alexis Madrigal argues that it may have run the well dry with its current line of thinking, and that it's now in desperate need of some big, new ideas on the order of those that gave rise to the internet and the web itself.

HTC One V

HTC has established a new bellwether for entry-level phones. Of course, though, that tempting price means having to settle for more limited horsepower.

BY MAT SMITH

It's the other One. While HTC's One X and One S jostle over which has the more potent processor, and customers weigh high-definition screens against high-science coatings, the One V has held back. Quite rightly, as this phone has no delusions of flagship grandeur. Negri Electronics has lent us an off-gray HTC One V to try out, although it will also be available in a black finish. With a nod to HTC's design past, a now relatively modest 3.7-inch screen and a ho-hum single-core 1GHz processor, the phone's looking to capture first-time smartphone buyers, along with anyone looking for a reasonably priced upgrade. For the money — around $346 (£229) — they'll get the latest

version of Android topped by a slightly tweaked version of HTC's Sense 4 skin. Is this the new benchmark for entry-level smart phones? Can a such a weedy processor handle Android 4.0? And what's with that chin? We'll answer all those questions and more in the paragraphs that follow.

Hardware

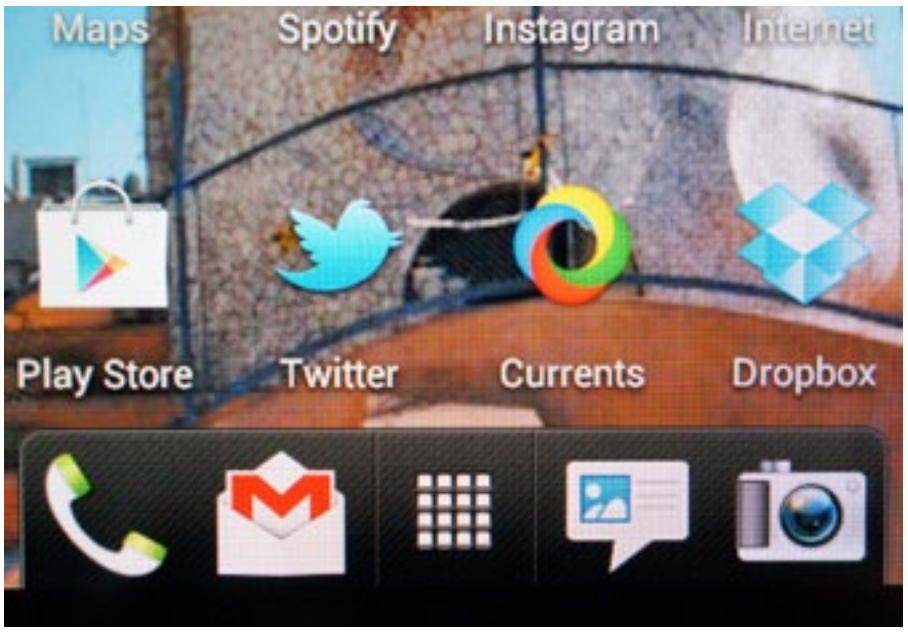
A re-imagined HTC Legend for the new smartphone world. That's probably the best way to describe it. The reassuringly solid aluminum unibody has returned and, given the 3.7-inch screen, you should almost certainly be able to handle the One V with ease. The anodized shell is tightly beveled — almost to the point of being too sharp— while the screen is raised slightly above the rest of the construction (a relief, then, that there's a layer of Gorilla Glass shielding it). In day-to-day use, we found the phone resilient to scratches on both the front and back sides — possibly more so than the acclaimed micro-arc oxidized coating on the One S.

This slightly raised surface includes a trio of capacitive controls, including the ICS-friendly multitask button at the bottom right. The speaker grille is the only feature that disrupts the flat front — presumably due to cost constraints, it isn't an integral part of the body like the machined speakers found on the One X and S. A front-facing cam-

era is also conspicuously absent and we assume this was another cost-cutting measure. The frame is just 9.4mm (.36 inches) thick, and remains uniform through the phone's curved base. Yes, the chin is back and it'll be as divisive as ever. Unlike the Legend, it's a largely blank addition to the phone — there's no optical trackpad this time, and all the buttons have migrated to other parts of the handset. It keeps the rest of the body flat while bringing the mic closer to your mouth. The rear, made in part from soft plastic, covers slots for the microSD and SIM (not micro-SIM) slots, but there's no battery access.

Removable storage is a necessity, not a choice on the One V, which arrives with under 1GB of useable space. To put that in perspective, you'll need a microSD card to use even the likes of Spotify and Instagram. The contoured sides are interrupted only by the volume rocker and non-MHL micro-USB port, hewing to the simple aesthetic marking the rest of the One series. Up top, you'll find the notification light alongside the headphone socket, with the power button also sitting along that top edge. The 5-megapixel camera and LED flash are both housed in a soft grey plastic panel similar to the removable cap at the base.

Admittedly, the whole design may appear pretty safe compared to HTC's recent forays, but it still registers as playful. We kept rocking the phone upwards onto that chin, and we dare say it's even a bit adorable.



Display

The One V squeezes 800 x480 resolution into a 3.7-inch screen, and it's another Super LCD 2 panel, like the One X. And though it lacks high-definition credentials, with a screen density of 252 ppi it's not embarrassingly grainy. Viewing angles are also impressive, and it fares respectably outdoors. More importantly, though, it embarrasses existing entry-level phones — a group where quality screen technology has often (if not always) been sacrificed. Sure, it doesn't stand up to the expansive likes of the One X or Galaxy S II, but color composition is excellent (better than the One S, even) and 3.7 inches isn't *that* small. At least, not for a lot of people. We noticed, however, on our two review samples that there was some worrying yellow discoloration on both screens in the top left corner and it was especially noticeable when on full brightness white.

Camera

You're not going to get HTC's state-of-the-art imaging technology here — a 5-megapixel sensor is a notable drop

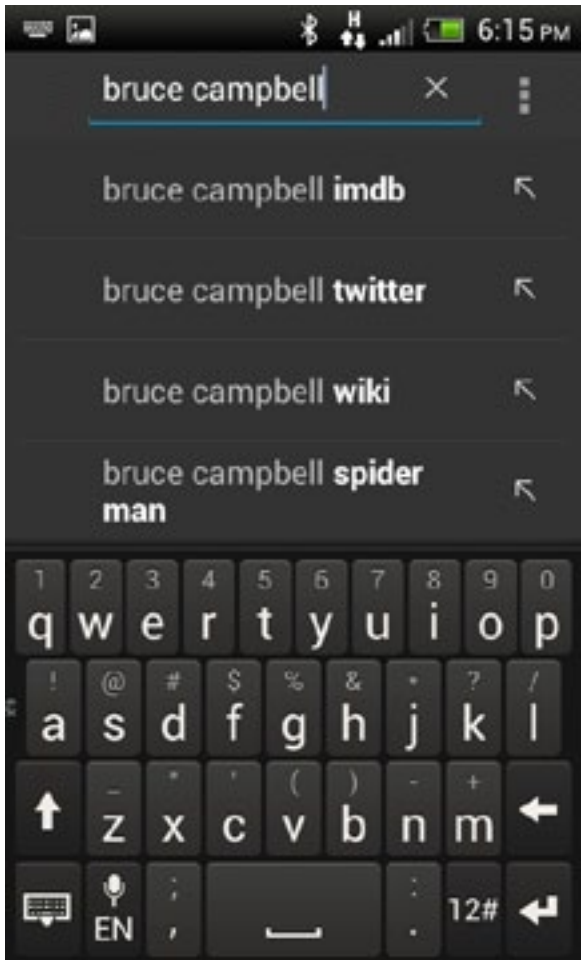
from the 8-megapixel shooter found on the rest of the One series. HTC's ImageChip is on board — but the difference in performance is presumably due to that gap in processing power. The app still steers like the rest of the series, however, with the same stripped-down interface. The HDR mode, simultaneous video and still capture and faux-tilt shift have all made the transition to this humble handset, although burst capture and speedy shot-to-shot times have disappeared along with that dedicated camera chip.

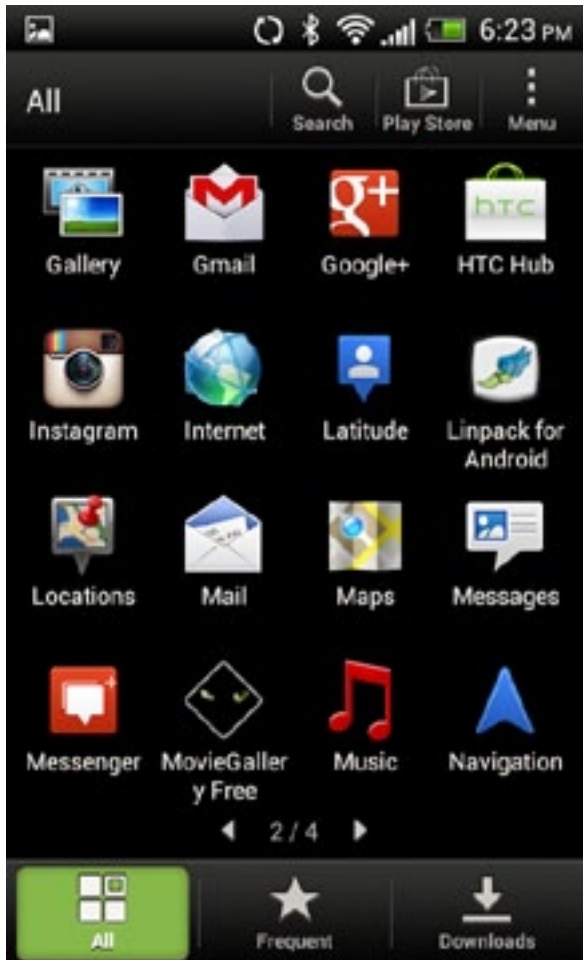
Compared to samples taken with the One S colors weren't as vivid, and while HTC's second-in-command had a tendency to over-do it on the contrast, the One V's results were still slightly drab. Fortunately, the f/2.0 lens is still in tow, which means low-light performance was predictably strong. The sensor often struggles with adjusting to sudden light changes, but it gets there in the end — something that would be less forgivable on video capture.

The One V can record video in up to 720p resolution, and also comes with the same slow-motion option found on other recent HTC models. Light performance is good, and HTC kept both auto-focus and touch-to-focus on the camera — something that might well slot it above many high-end models capable of recording full 1080p video but lacking these focus controls.

Software

Android 4.0 on an entry-level device. HTC's drawn a line in the sand, and it's something that other manufacturers would do well to copy. Even better, the single-core processor seems largely up to the task. Because of the power differences





there have been some sacrifices — and these have mostly come in the form of a watered-down Sense 4 skin. You'll find that while it looks similar, certain visual flourishes such as the full-screen weather animations and globe view within the weather widget have been cast out.

Pinching to view all your home screens at once doesn't have any effect and the 3D transitions between screens are gone too. The keyboard has also been tweaked, losing the navigational arrows found on HTC's larger 2012 phones — a sensible choice, we say, given the reduced screen size. We've already done an in-depth take on HTC's latest Android skin, but the differences between the One V and the rest of the One series are worth noting. Minor touches, like the ability to "zoom" on text within SMS messages, are still here, while menu and settings navigation is also indistinguishable from other phones running Sense 4. However, the One V isn't compatible with the HTC's Media Link HD dongle and — like the One S — misses out on the NFC train, both hardware- and software-wise. Something we didn't catch while poring over the One V's spec sheet when it was first announced is that there's also no digital compass, meaning Google Maps' orientation won't change as you turn to face a different direction.

Performance and Battery Life

The phone largely performed better than expected on our benchmarks. Despite a single-core Qualcomm Snapdragon S2 MSM8255 ticking away at 1GHz, the phone kept up with most of our demands. However, browser performance is underwhelming, and the phone occasionally stutters while navigating menus and using apps. It often

	HTC ONE V	SAMSUNG RUGBY SMART	HTC ONE S
Quadrant (v2)	1,636	1,386	**5,053**
Linpack single-thread (MFLOPS)	34.33	50.9	**103.88**
Linpack multi-thread (MFLOPS)	31.27	N/A	**222.22**
NenaMark1 (fps)	52.8	41.48	**61.0**
NenaMark2 (fps)	28.7	22.8	**60.8**
SunSpider 0.9.1[1] (ms)	3214.7	4,319.45	**1742.5**
Vellamo	1,155	758	**2,452**

Notes: [1] Lower numbers are better

needs a few seconds to catch its breath when starting apps and transitioning between them.

Compared to the Samsung Rugby Smart, another recent single-core smartphone, the One V performs well. As we've already said, the phone is generally capable, but struggles with moderately to intensely challenging challenges, like graphics-heavy games and visually dense websites. Swiping around Engadget, the browser often stuttered, attempting to parse the next picture as we scrolled. There were occasionally greater hurdles, like when we used Google's autocomplete search box, and the One V really had to think about what it was doing. One area where the One V does excel — and something that surprised us, given HTC's past record on this — is the device's boot-up time. Seconds after turning on the phone, we were able to boot up apps and make calls. We suspect this is thanks to HTC's FastBoot option, found in the battery settings.

The One V offers admirable runtime, lasting just over nine hours during our standard battery run-down test, which entails playing a video at 50 percent brightness, with WiFi and mobile data on. In more typical use, with plenty of music playback, Twitter, email and Facebook all synced and several browser missions, we got closer to two days of use on a single charge. Given the battery's relatively frugal 1,500mAh capacity, it's a pretty respectable showing.

Alongside WiFi (802.11b/g/n) and Bluetooth 4.0, the One V juggles tri-band HSPA (850/900/2100), capable of 14.4Mbps down and 5.6Mbps up and quad-bandGPRS(850/900/1800/1900) radios. On the HSPA connection, we saw speeds around 2Mbps down and 1.2Mbps up, which is comparable to other HSPA devices we've tested. We also enjoyed clear calls, even on the busy streets of London.

Wrap-Up

The One V is the third and final piece

of HTC's game plan: a stylish, petite, entry-level model that will hopefully draw in anyone looking for a new phone running Android's latest. Indeed, it's a capable phone on par with several once high-end single-core devices from last year. Even better, this one is cheaper and arrives with Android 4.0, in all its multitasking, adjustable widget glory. It's also a phone that's *visibly* HTC and exudes as much character as the-lovely One S and One X — a boon, given the sheer number of Android phones floating around these days.

Our main complaint here isn't the camera, nor the build quality, nor the screen (aside from the discoloration); it's the processor. A little bit more horsepower would have really helped the One V stand out as *the* go-to low-price Android phone. Aside from that, the One V is a compelling proposition for anyone hunting for their first smartphone, or who knocked on the Android party door a little early (still packing that original HTC Legend?). Sure, with a bit more cash you can get the Galaxy S II, with its bigger screen and more potent processor, but are you willing to wait around (like many people still are) for that software upgrade? Here, there will be no update hassles; just Ice Cream Sandwich with a newcomer-friendly Sense skin and a tempting sub-$350 price tag. And a chin. Don't forget the chin.

Mat is a contributing editor who lives in the UK. He's a Liverpool supporter who enjoys obscure Japanese gameshows.

BOTTOMLINE

HTC One V

$346 (£229)

PROS

- Superb build quality
- Android 4.0 on an entry-level phone
- Boots quickly

CONS

- Last year's specifications
- Misses out on some One series features
- Processor is overwhelmed by apps and internet browsing

HTC has established a new bellwether for entry-level phones. Of course, though, that tempting price means having to settle for more limited horsepower.

Samsung Galaxy Tab 2 (7.0)

A smart choice for budget-conscious buyers looking for a dependable Android 4.0 tablet on the cheap.

BY JOSEPH VOLPE

There's an age-old saying: "If a tree falls in the forest and no one's around to hear it, does it make a sound?" We're tempted to posit that question to Samsung as it clears room in its crowded product portfolio for yet another Galaxy Tab. One month after announcing it at Mobile World Congress, the outfit's bringing its 7-inch sequel to the masses. As if Sammy's Galaxy Tab lineup weren't already overflowing, this guy comes bearing internals that make it near-identical to the OG Galaxy Tab and 7.0 Plus that have come before it.

A few specs, though, have seen downgrades: the front-facing camera now has VGA resolution, and the dual-core TI OMAP processor powering it is clocked at a lower 1GHz. Still, the 1024 x 600 TFT LCD display remains intact, as does the 3-megapixel rear camera, microSD slot and IR blaster. It's a puzzling hardware refresh ushering in modest tweaks to a proven design, with the biggest change of all being the move to Ice Cream Sandwich (with TouchWiz, of course). Is that software upgrade alone compelling enough to warrant an entirely new

piece of hardware in Samsung's lineup? Maybe, maybe not. It all comes down to price, and at $250 this WiFi-only tablet could give consumers with Kindle Fire ire something to talk about. Follow along to see what we mean.

Hardware

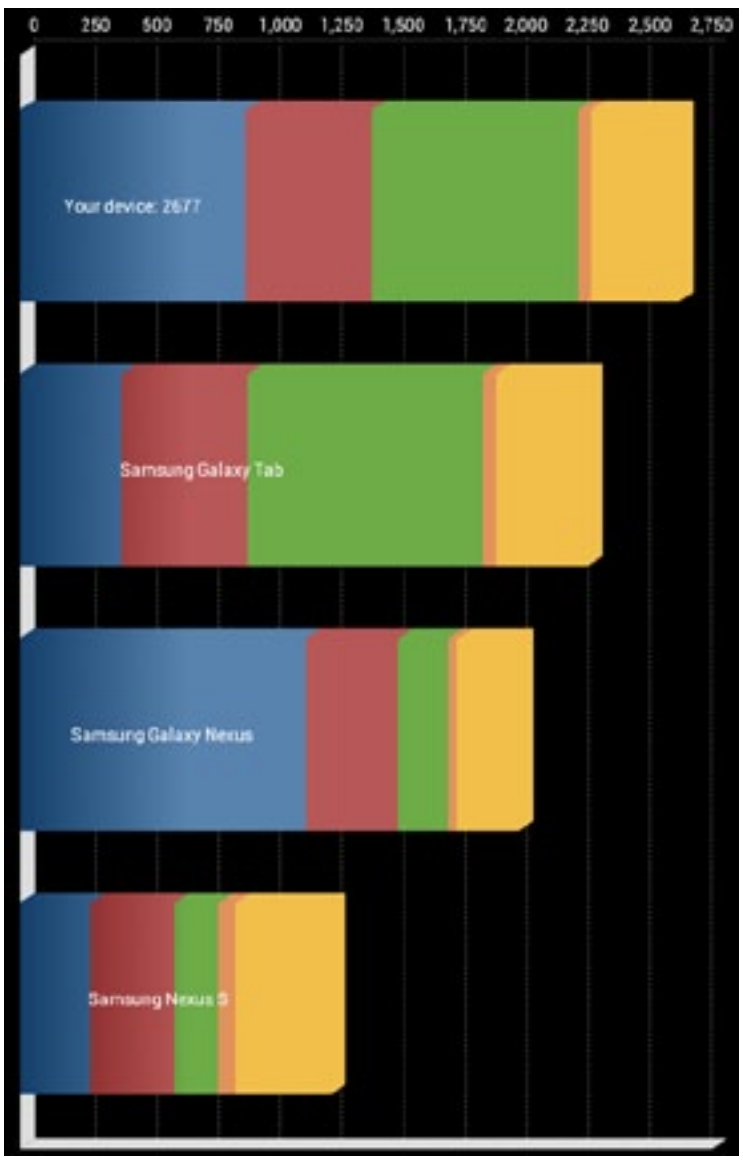
Some family resemblances can be tenuous, causing those in the know to cast suspicious glances towards the figurative OEM milkman, but in the Tab 2's case, the parental lineage is all too clear. With a build that's barely indistinguishable from the higher-end 7.0 Plus (now about $420), the tablet tacks on a marginal amount of thickness, measuring in at 10.5mm versus 9.96mm. Still, despite that extra padding it weighs the same as its older sibling: 345 grams, or about 0.76 pounds.

At first blush, it would appear Samsung's done little, if anything, to set these two devices apart. After a closer, lingering inspection, though, you'll notice some tell-tale signs of a refresh, like the omission of both a frontward speaker grill and LED flash 'round back. Cosmetically, those are the standout differentiators, but there are more subtle tweaks that make this iteration feel like more of an ergonomic match made in hand. Flip the Tab 2 into landscape orientation and you'll see that its smooth, gunmetal grey enclosure spills over gently to meet the bezel with more of a pronounced curve. That alteration ultimately makes the tab more pleasant to hold while watching video, browsing one-handed or viewing photos. While it would've been nice to see the 7.0 Plus's classier faux-brushed metal digs make a reappearance, the move to a smooth enclosure shouldn't ruffle prospective owners; it's still smudge-free, despite being slightly slippery.

Schematic variation clearly wasn't on order when Samsung set its designers loose on the Tab 2. As it was on the Plus, so too, it goes on the Tab 2 (7.0). The right side is home to hardware keys for power and volume, in addition to an IR blaster, while a proprietary charging dock and dual speakers take up residence at the base. Move to the left and you'll find a covered microSD slot, with the 3.5mm headphone jack sitting on

BENCHMARK	GALAXY TAB 2 (7.0)	GALAXY TAB 7.0 PLUS
Quadrant (v2)	2,840	**3,212**
Linpack single- and multi-thread (MFLOPS)	37.1 / 61.3	**46.3 / 73.7**
NenaMark1 (fps)	57.6	**59.3**
NenaMark2 (fps)	30.4	**49.4**
Vellamo	978	**1,191**
Neocore (fps)	**59.6**	59.1
SunSpider 0.9.1[1] (ms)	2,239.20	**1,659.90**

Notes: [1] Lower numbers are better



the nearby top edge. The tab's backside reveals no superfluous embellishments, save for the unaccompanied 3-megapixel shooter and Samsung's logo.

The front face is as unadorned as ever, with a VGA camera and ambient sensor shrouded in the thick black bezel that surrounds the 7-inch, 1024 x 600 PLS TFT display. It's a pity, really, that Samsung isn't doing more to move beyond that old screen tech, employed as far back as the original Galaxy Tab. While viewing angles appear to hold up well, it still succumbs to extreme-enough lighting. Truly, the Tab 2 (7.0) could almost double as a mirror given its propensity for reflection.

Performance and Battery Life

Right out of the gate, the Tab 2 (7.0) is hamstrung with lesser specs than its big brother, the 7.0 Plus. Its CPU, fashioned by the folks at Texas Instruments, differs from the Samsung-made Exynos chip used in the Plus. Not to mention, it's also 200MHz slower. Does that translate into a noticeable difference? Well, yes and no. Using a gamut of performance tests as our guide, Sammy's refreshed tab takes a solid backseat to its older sibling, losing in every round, save for a infini-

tesimal Neocore win. In the real world, though, those second best benchmark tests won't carry much weight, thanks to the tab's pleasingly fast user experience. Navigation through the carousel of homescreens bumps along at a consistent, fluid pace. Not once did we struggle with the kind of hiccups that plague other skinned Android slates.

The browser on the Tab 2 (7.0) may not be as fast as the Plus's, but its ability to snappily render full desktop pages in as little as 10 seconds should not leave users wanting. Even pinch-to-zoom feels brisk, although you will notice some white spaces, along with a loss in the integrity of the text.

When it comes to longevity, the company's once again fallen back on the tried-and-true: a 4,000mAh juicepack. Except where you'd imagine this less demanding, lower-clocked tablet would more slowly sip that allotted power, it actually chugs, going from full to empty after seven hours and 38 minutes of video playback, compared with eight hours and change for the 7.0 Plus. That's with Twitter set to sync at 15-minute intervals, one push email account active, brightness set to medium, and WiFi, Bluetooth and GPS enabled. Should you require less intense usage, you could probably squeeze a day and half of productivity from a single charge.

Software

Compared to Samsung's Note products with their suite of S Pen apps, the very vanilla Tab series offers much less

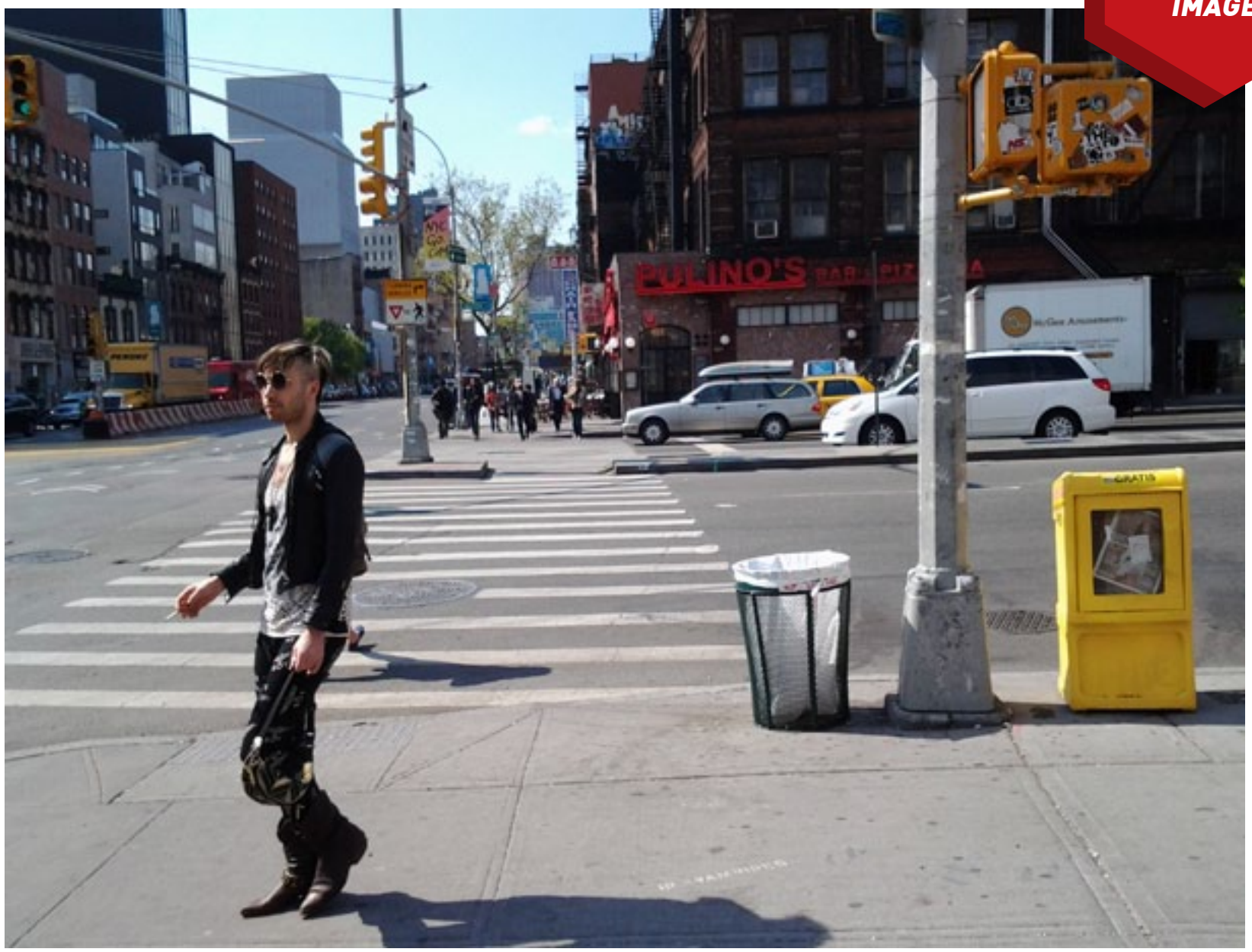
TABLET	BATTERY LIFE
Samsung Galaxy Tab 2 (7.0)	**7:38**
Samsung Galaxy Tab 7.7	12:01
Apple iPad 2	10:26
ASUS Eee Pad Transformer Prime	10:17
Samsung Galaxy Tab 10.1	9:55
Apple iPad (2012)	9:52 (HSPA) / 9:37 (LTE)
Apple iPad (2010)	9:33
HP TouchPad	8:33
Barnes & Noble Nook Tablet	8:20
Lenovo IdeaPad K1	8:20
Motorola Xoom	8:20
T-Mobile G-Slate	8:18
Samsung Galaxy Tab 7.0 Plus	8:09
Lenovo ThinkPad Tablet	8:00
Amazon Kindle Fire	7:42
Archos 101	7:20
Archos 80 G9	7:06
RIM BlackBerry PlayBook	7:01
Acer Iconia Tab A500	6:55
T-Mobile Springboard (Huawei MediaPad)	6:34
Toshiba Thrive	6:25
Samsung Galaxy Tab	6:09
Velocity Micro Cruz T408	5:10
Acer Iconia Tab A100	4:54
Toshiba Thrive 7"	4:42

For better and worse, Samsung's TouchWiz overcoat looks nothing like Google's version of Android 4.0.

in the way of standout features. Still, in a bid to position the Tab 2 (7.0) as a media consumption device, Samsung outfitted it with an IR blaster. Coupled with the pre-installed Peel app (the same one loaded on the 7.0 Plus), the Tab 2 becomes a universal TV remote replete with personalized program recommendations. It's a welcome value-add that turns what would otherwise be your second browsing screen into a living room accessory. But that's not the main star of this 7-inch, galactic show: those honors go to its Android Ice Cream Sandwich UI.

For better and worse, Samsung's TouchWiz overcoat looks nothing like Google's vision of Android 4.0. It all depends on which you prefer more: the pure vision set forth by Andy Rubin or the user-friendly enhancements brought forth by Samsung. Certainly, a UX of any kind is an acquired taste, and here it manages to stay relatively unobtrusive. You'll have access to the same suite of GApps, in addition to a heaping helping of bloat — about twenty, in total — some of which can be disabled, not uninstalled. What are the culprits this time 'round? Well, for starters, you have Samsung's own ChatOn, Media Hub, Memo and S Planner applications joining the likes of Netflix, Polaris Office and Amazon Kindle, just to name a few. Hopefully, if you opt-in for this tablet, you can live with that permanent application load.

In what's turning out to be a very pro-consumer trend, Samsung's bundling the Tab 2 (7.0) with a complimentary, one-year Dropbox account with 50GB of storage, similar to what HTC's offering with its One devices. That extended cloud storage is intended to comple-



ment the built-in 8GB it ships with, and whatever size microSD card you choose to insert (you can go as high as 32GB).

Camera

It goes without saying that tablets aren't the most reliable, nor for that matter *satisfactory* replacements for smartphone cameras, much less point-and-shoots. That said, the rear 3-megapixel shooter does a decent job of producing fairly detailed (if slightly oversaturated and noisy) shots. There's no elegant way to zoom in and out using the on-screen interface, so users will have to awkwardly toggle with the volume rocker for that purpose. There's also no tap-to-focus here. What you will have access to is a host of customizable in-app settings familiar to most users, like scene modes, resolution and white balance.

Video playback, recorded at 720p resolution, evinced many of the same quirks, like that slight overcompensation for color and fuzzy overall composition. Audio, however, is undeniably poor and comes across extremely muffled and static-y, picking up only the loudest of environmental sounds.

The Competition

So why should Samsung risk further diluting its dominant Android tablet brand with a WiFi-only hardware

You'll be hard-pressed to find a better ICS tablet at this price.

refresh that takes away much of the performance and construction gloss of the more premium, 21Mbps HSPA+ enabled Plus? Well, positioned at half the price — $250 — the 7-inch Tab 2 is already the more compelling option for budget-minded shoppers. Subtract the need for a monthly data contract, factor in some (mostly) comparable internals and you've got a low-cost device that escapes allusions to other budget devices. As a Galaxy Tab alternative, the Tab 2 is a sound purchase.

But there's another unpretentious 7-incher that's been sweeping the market with its open arms, Android archi-

tecture and deeply integrated ecosystem: the Kindle Fire. That tablet, still running an unrecognizable build of Gingerbread, offers an identical wireless experience and costs $50 less, to boot. Backed by Amazon's vast e-book, MP3 and on-demand video library, the Fire comes off as the indisputable king of this hill. There's just no overwhelming reason why consumers would dole out extra money for a media consumption device that does the same duties without the vast content resources. Fanboyism aside, you'll either want to pony up for a network-connected slate or get the best bang for your buck — and that would be the Kindle Fire.

Wrap-Up

At almost half the price of the similar-looking Galaxy Tab 7.0 Plus, the Tab 2 performs gracefully, comes with ample storage space to harbor your vast trove of media, and generally makes Google's latest software more accessible. Still, despite its reliable performance, it seems to us that Samsung didn't do enough to effectively overpower the allure of the Kindle Fire's tidy ecosystem. Without access to a well-curated content library, the Tab 2 (7.0) doesn't really stand out amid an ever deepening line of Android 4.0 devices, and it will have to work that much harder to win the hearts of consumers looking for a 7-inch tablet (or just a really inexpensive one). All that said, you'll be hard-pressed to find a better ICS tablet at this price. So if that newly minted OS is what your wallet's angling for, go ahead: take the plunge and call this media-minded slate your own. Had Samsung chopped off an extra $50 and put this on even ground with the Kindle Fire, though, it might have had an even clearer winner on its hands.

Joseph Volpe is ambiguously ethnic. He is also an Associate Editor at Engadget.

BOTTOMLINE

Samsung Galaxy Tab 2 (7.0)

$250

PROS

- Ships with Ice Cream Sandwich
- IR Blaster transforms tablet into smart remote
- Performance is fast and fluid
- Decent battery life for a 7-incher
- Priced to sell

CONS

- No LED flash accompanying the rear camera

Samsung's Galaxy Tab 2 (7.0) is a smart choice for budget-conscious buyers looking for a dependable Android 4.0 tablet on the cheap.

AT&T HTC Titan II

The Titan II improves upon its predecessor in performance and image quality, but it's difficult to justify the premium price tag when AT&T's giving away another solid WP handset for free.

BY BRAD MOLEN

Titan. It's a ballistic missile and one of Saturn's moons. The word also plays a huge role in Greek mythology and in normal use refers to something of enormous power and influence. So it's understandable, then, why HTC seems to prefer it as a name for its phones. So much so, in fact, that the release of the LTE-enabled Titan II on AT&T actually marks not the second, but *fourth* iteration of the name: if you recall, the company once released two Windows Mobile devices called the TyTn.

We had mixed feelings as we watched the latest Titan get introduced at AT&T's Developer Summit in January. On the one hand, we were intrigued by the idea of a smartphone with a monstrous 16-megapixel camera, as well as LTE — something the world previously hadn't seen on a Windows Phone device. But the announcement also took place a mere two months after its predecessor launched on AT&T's network, which gave us the sinking feeling Ma Bell's new strategy was to crank out a plethora of refreshed phones boasting only a couple of new features (see: the Samsung Galaxy S II Skyrocket). So what of this sequel we have before us? Will it come out victorious like *Remember the Titans* or a disaster like *Titanic*? Is it worth it to new customers to shun the free Nokia Lumia 900 and shell out $200 for this guy instead? Read on to find out.

Hardware

It's amazing to witness the contrast in design philosophy between HTC's Windows Phones and its latest generation of Android devices (i.e., the One series). While one feels fresh, experimental, the other hearkens back to some of the Taiwanese company's older handsets. And it shouldn't be that difficult to figure out which one is which.

We suppose it shouldn't come as too much of a surprise. After all, HTC likely views its Android phones as its cash cow, which is why it's invested so heavily in the success of the One X, the One S and their respective variants. The Titan II, on the other hand, doesn't appear to have received quite the same level of tender lovin' care from HTC (or AT&T, for that matter), evidenced by its Easter Day launch, and a price at least double that of the Nokia Lumia 900 (depending on what kind of deal you find), its fiercest Windows Phone competitor. Nokia recruited Nicki Minaj to perform at a free concert in Times Square; HTC did... nothing.

Of course, launch details have absolutely zilch to do with how the phone's features or performance, but we mention it to highlight one important aspect of the business: with the exception of Nokia, phone manufacturers aren't betting on Windows Phone handsets as a major source of revenue. And perhaps they won't be until the next generation of devices arrive on the scene, bearing Windows Phone 8 (Apollo). But because of this, these phones aren't given the same VIP treatment as their Android brethren.

Stepping off of our soapbox, let's dive into the ins and outs of the Titan II. It sen-

sibly adds to the spec sheet of its predecessor in a few critical areas, such as connectivity, camera optics and battery life. Unfortunately, improvements like these never seem to have a flattering effect on the weight and size of a device. The phone measures 10.2mm (0.4 inches) at its thinnest point, 0.3mm thicker than the last-gen model. As for its thickest spot — the hump that makes room for that larger camera sensor — we pulled out a ruler and estimated it to be around 13mm (0.5 inches), and that doesn't even include the fact that the camera protrudes about a millimeter beyond the frame. If you believe the OG Titan's 9.9mm thickness was borderline acceptable, a 30 percent increase in thickness could be tough to swallow. The phone also tips the scales at 6.1 ounces (173g), a rather significant change from the first version's 5.64 ounces. Purchasing this phone will most certainly be a matter of compromise: it's thicker and heavier than the original (and in our opinion, its design is a touch uglier as well), but in return you're getting a larger battery, LTE connectivity and a 16-megapixel sensor instead of an 8-megapixel one.

You heard it right: newer design doesn't always equate to better. The older Titan is sleeker, thinner, lighter and more elegant, while its sequel just feels more awkward and chunky in comparison. Despite its bulkier frame, the Titan II is still relatively easy to hold, especially if you're blessed with larger hands. It's still not as comfortable in our palms as the One X with its curvaceous, slightly thinner build, but at least the concave back is coated in soft-touch plastic that offers a degree of extra tactility. Still, where the One X was doable for smaller paws, this particular phone may be just a little too unwieldy for anyone with petite hands to fully appreciate it.

Quickly glancing at the front of the Titan II, you might not see much of a difference between this and the last-gen Titan: they sport the same display, along with three capacitive buttons and a front-facing camera with an Inspire 4G-style recessed speaker grille up top. Look closer, though, and you'll see the glass curves up slightly once it reaches the navigation keys at the bottom, forming a small chin.

The micro-USB charging port still sits by its lonesome on the left side of the phone, while a volume rocker and two-stage camera shutter button play together on the opposite end. Up top you'll find the power / lock button, mic and 3.5mm headphone jack, which is actually designed with the signature HTC bump around it. This design flourish wasn't present on the first Titan and frankly, we preferred it that way; the bump just feels like an interruption of those smooth curves you'll find on the back side. It's a similar story around the micro-USB opening, though the effect is far more subtle.

The back side is where the phone becomes more interesting. Instead of choosing a one-piece removable battery cover that encompasses the entirety of its rear (as it did on the first Titan), the Titan II's back is separated into three

sections, and only one — the cover protecting the SIM card panel near the bottom of the device — is removable. But be warned: removing the cover will automatically turn off the handset. This is thanks to some antenna contacts that are printed on the inside of that cover and have matching contacts in the phone's chassis. A silver microswitch labeled ALPS detects that it's been removed and powers down the device. It can come in handy if your phone freezes and you want to perform a soft reset, but woe to you if you happen to be in the middle of something incredibly important when you want to swap out your SIM. As for the cover itself, it's the only section of the handset that's textured in any way, with hundreds of shallow little divots. Despite this design choice, it doesn't offer much additional traction for your slippery hands, though we found it to be quite helpful when sliding the cover off.

Moving up the back, the middle section emulates the signature HTC unibody style that was prevalent in so many models last year, but it's interrupted by another piece on the top that covers the camera sensor, dual LED flash and speaker grille. Both sections are non-removable and each uses a different shade of grey, which isn't an unusual design choice for the Taiwanese company (why, the grey / blue One S takes a similar tack, only the fading colors are arranged inversely to this).

If you're looking for heaps of storage space, you're not going to find it here. The Titan II contains 16GB of internal memory and, just like the vast majority of WP7 devices, is lacking in any external storage options. Unless you prefer to stash all of your important files away in the cloud, you'll have to be rather picky about what goes on your phone at any given time, since you only get 13.5GB of user-accessible storage. This may sound like plenty of room for some of you, but remember that as camera resolutions have increased, image files have grown much larger (roughly 4MB to 5MB per photo), and these supersized pics are likely to eat up your available space as an appetizer.

In case you're interested in the full spread of specs, we've put together a nice little table to compare the Titan II's offerings with what you'll find on the original version as well as the Lumia 900, the phone's main competition in the Windows Phone sphere, particularly on AT&T.

Display

We're not going to dwell much on the Titan II's display, because it offers absolutely no improvements over the original's 4.7-inch WVGA (800 x 480) LCD panel. The Microsoft-mandated limits

	HTC TITAN II	HTC TITAN	NOKIA LUMIA 900
Dimensions	5.2 x 2.7 x 0.4 inches (132 x 69 x 110.2mm)	5.18 x 2.78 x 0.39 inches (131.5 x 70.7 x 9.9mm)	5.03 x 2.7 x 0.45 inches (127.8 x 68.5 x 11.5mm)
Weight	6.1 oz (173g)	5.64 oz (160g)	5.64 oz (160g)
Screen size	4.7 inches	4.7 inches	4.3 inches
Screen resolution	800 x 480 (199ppi)	800 x 480 (199ppi)	800 x 480 (217ppi)
Screen type	S-LCD	S-LCD	ClearBlack sAMOLED+
Battery	1,730mAh	1,600mAh	1,830mAh
CPU	1.5GHz single-core Qualcomm MSM8255T (Snapdragon S2)	1.5GHz single-core Qualcomm MSM8255T (Snap-dragon S2)	1.4GHz single-core Qualcomm APQ8055 (Snapdragon S2)
GPU	Adreno 205	Adreno 205	Adreno 205
RAM	512MB	512MB	512MB
Internal storage	16GB	16GB	16GB
External storage	None	None	None
Rear camera	16MP, f/2.6	8 MP, f/2.2	8MP, f/2.2
Front-facing camera	1.3MP	1.3MP	1.0MP
Video capture	720p HD	720p HD	720p HD
NFC	No	No	No
Radios	Quadband GSM / EDGE; HSPA+ 850 / 1900 / 2100; LTE 700/1700	Quadband GSM / EDGE; HSPA 850 / 1900 / 2100	Quadband GSM / EDGE / ; HSPA+ 850 / 1900 / 2100; LTE 700 / 1700
Network speeds	LTE, HSPA+	HSPA 14.4Mbps	LTE, HSPA+ 21.1Mbps
Bluetooth	2.1+EDR	2.1+EDR	2.1+EDR
MHL	No	No	Yes
Internet Sharing	Yes	Yes	Yes
FM Radio	Yes	Yes	Yes
SIM card	Standard	Standard	Micro

of Windows Phone are to blame for the lack of progress in this area, so we won't fault HTC or AT&T this time.

But we can't let the issue go without a fair amount of criticism: now that we've come to expect 4.7-inch displays with 720p resolution and pixel densities topping 315ppi, it's getting more and more difficult to excuse a WVGA model that delivers a subpar 199ppi. However, while the pixelation is painfully evident, we're at least happy with the superb viewing angles and above-average color saturation. We found we could see the screen well enough in direct sunlight, but only when the brightness was dialed up to its highest setting. Go lower and hardly anything is still readable.

The bottom line is that whether you were satisfied or unimpressed with the OG Titan's display, you'll feel exactly the same way now. And if you're looking to grab a Windows Phone with a sharper screen, your best bet is to either wait for Apollo to come out (at which time, we hope, higher-res displays will be fully supported) or opt for a device with a smaller screen.

Performance and Battery Life

The Titan II runs on a 1.5GHz single-core Snapdragon S2 45nm CPU (MSM8255) with an Adreno 205 GPU and 512MB of RAM. This is one of the better processors you can get on a Mango device, but it's the same exact setup as the original Titan. For better or worse, Windows Phones are utterly predictable in terms of performance; the lack of multi-core support on the platform means that newer devices probably won't be getting any faster or smoother until Microsoft lifts its restrictions. At the same time, there's an argument to be made that the OS is already efficient, that a cap on processing power contributes to comparatively long battery life. And don't forget, if a Kardashian is using a Lumia 900, that must mean it's good enough for us, *right*?

In truth, though, while power users will always demand instantaneous response from their phones, the Titan II should be more than sufficient for casual users. Pinch-to-zoom feels smooth, and we love the responsiveness of the touchscreen, though as with other Windows Phones, you might end up waiting an extra second or two for the various animated transitions to run their course before you move on to your next task. We also found that the back of the phone gets warm during CPU-intensive tasks, but not much hotter than other devices. The temperature isn't so high that the phone becomes uncomfortable to hold, though it's definitely something you'll notice with enough use.

Compared to Android, Windows Phone is lacking in benchmarking tools. WP Bench and SunSpider are the main tools available to us for measuring performance, but let's face it: given that the top-end Mango devices have nearly hit a plateau for processing power, it's not like the numbers would vary too widely anyway. Nevertheless, we've tossed in a few scores for your perusal.

The Titan II is powered by a 1,730mAh battery — an improvement over the orig-

	HTC TITAN II	HTC TITAN	NOKIA LUMIA 900
WP Bench	94.5	**96**	92
Battery rundown (CPU-intensive)	2:50	3:00	**4:29**
SunSpider 0.9.1[1] (ms)	**6,445**	6,500	6,902

Notes: [1] Lower numbers are better

inal's 1,600mAh offering. Unlike its predecessor, however, this particular model doesn't come with a user-removable juicepack. It seems that this trend isn't going away anytime soon, but we're less concerned with battery life on Windows Phones than any other platform. We found absolutely no reason to be worried about the speed at which the new Titan sucks down power, since our average use (that's the usual suite of email, Twitter, Facebook, push notifications, messages and other day-to-day activities) gave us nearly a day and a half of life. Naturally, lower usage will likely make it possible to eke out a full two days before requiring a new charge.

In terms of benchmark comparison, our CPU-intensive battery rundown test on WP Bench held out for two hours and 50 minutes before the phone took its last electronic breath — a bit shorter than the original Titan, of course, but understandably so given the addition of an LTE radio. In short, we'll make this perfectly clear: if battery life is your number one priority on a smartphone, independent of processing power, a Windows Phone is going to be your best option outside of a Motorola Droid RAZR Maxx.

When testing the LTE network, we found the Titan II performed just a smidgeon better than the Lumia 900, grabbing speeds of 21Mbps down and around 14 up during our tests in San Francisco. These tests were performed with four out of five bars of reception, so it's quite possible that we're not even hitting the phone's maximum capacity. Though it's in line with the AT&T Samsung Galaxy Note's next-gen tests, it's not the fastest device we've tested on the carrier's LTE network — it's still leaps and bounds better than the carrier's HSPA+ service, however, which netted us around 4Mbps down and 1.5Mbps up.

We love the Titan II's speakers for making calls and listening to music and podcasts. We placed the phone on a desk backside-up, walked into a room 20 feet away and could still hear everything with crystal-clear clarity. As for call reception and quality, we found the phone holds a strong signal and the mics and internal speakers are some of the loudest we've tested in a while. We heard the other callers so well, in fact, that there were several instances in which we had to turn down the volume. If you're hard of hearing, we doubt you'd have to worry too much, because the device offers a hearing aid compatibility setting in which the in-call volume kicks up a notch.

Cameras

A 16-megapixel camera with an f/2.6, 28mm lens, backside-illuminated sensor and dual LED flash. On a phone. Such a thought is enough to shatter the mind into smithereens. Without a doubt this is the single most marketable improvement the Titan II has to offer, and essentially the only reason you might consider purchasing this thing above the less-expensive Nokia Lumia 900. So do the extra pixels pack a picturesque punch? Is it worth another Benjamin to go with this particular Windows Phone?

First, one of our absolute favorite features made available on Windows Phones is the inclusion of a dedicated shutter button. This is becoming an incredibly rare find on most new Android devices, and we fear its extinction on the platform is nigh. Not so with Microsoft's mobile OS: here, the feature is alive and well. The Titan II's version is double-detent, which means you can hold the button halfway to lock in focus. Curiously, though, you're still not allowed to lock the exposure, which nearly defeats the whole purpose of this feature. We also noticed that our hands had to be incredibly steady when shooting pictures this way, since there's so much travel on the button itself that it's easy to shake the phone and take a blurry shot by accident. If this is the case for you, your best bet is to take advantage of the camera's image stabilization feature. If you're not a fan of the shutter button, you can alternatively tap the screen itself to autofocus and take the image. Fortunately, you can also focus anywhere on the viewfinder instead of being confined to the center.

The variety of settings within the UI is

also quite promising if you're willing to do some tweaking to get the perfect shot: ISO, panorama, macro focus, backlight aids, smile capture, face detection, white balance, red eye reduction, image stabilization and flicker adjustment are all on the menu. It improves on the One series by adding the ability to switch metering mode (center, average and spot are all included here), and it still offers adjustment settings for brightness, contrast, sharpness and saturation. The camera also allows for burst shooting, which in this case means being able to snap five shots in a row. It also adds in a full deck of 18 various scene options, complete with auto and "intelligent auto" modes, which proved adept at picking out the best scene for us.

And now, we're going to pick a few nits, since our expectations for the camera were so high. Many of the photos we shot in direct sunlight ended up slightly overexposed, which is naturally all too easy with most smartphone cameras. Shots taken indoors, however, turned out great. The cam also fares decently well in low-light scenarios with the flash turned off, but we noticed the autofocus continually struggles in these situations, and we ultimately encountered too much noise for our liking. We would've preferred to see HTC throw in an f/2.2 lens to add more light, much like it did with the original Titan.

Aside from these small frustrations, we were impressed with how detailed the vast majority of our shots turned out. When the flash is enabled, it does an incredible job accurately capturing color, and the pair of LED lights is powerful enough to light up an entire room. We also love how well macro focus images came out, no matter the shooting conditions. All told, we captured some amazing shots, but we can't declare the Titan II the ultimate cameraphone champion of the universe — the Nokia N8 still keeps the crown in this regard, and we weren't able to tell a large enough difference between it and the Amaze 4G's camera to even call it the best of HTC's lineup. It just goes to show that higher megapixel counts doesn't just inherently make a camera better. With that said, we were still quite pleased with the overall results and would be happy to use this camera on a regular basis.

The front-facing camera is about what you'd expect for a 1.3-megapixel shooter — it's definitely nothing to write home about. Heck, it's barely anything to write about in this review. Self-portraits turned out wildly overexposed; believe us, this editor's pale face doesn't need any help in that department. Video taken with the front shooter records at 640 x 480, and you can't make any adjustments to how it looks. In fact, the

settings button is completely greyed out, rendering it completely useless. The movies taken this way actually appear pretty smooth, but our overarching complaints about overexposure remain.

Where the original Titan failed by compressing the JPEG down to a manageable 1.5MB or so per photo, its successor triumphs. The pictures come sized as 4640 x 3480, and as mentioned earlier, our images ended up being anywhere between 3.5MB and 5MB each, depending on the amount of information captured. In comparison, this is about the same size of the pictures we've taken with our 16.2-megapixel Sony NEX-C3. Oh, and how about vids? On the Titan II, a minute-long video using 720p resolution took up 75MB (similar to the first Titan), whereas the One S hogged a grand total of 37MB, despite recording the same subject, at the same resolution for the same length of time. Speaking of video, how does the Titan II handle its 720p max resolution? It does a pretty good job capturing motion without too many choppy bits, and the audio is crystal-clear, too.

Software

If you've read through the full review to this point, it's pretty obvious what kind of software to expect: it's a Windows Phone through and through, running on version 7.5 (Mango). In other words, if you're a fan of Ballmer's operating system, you already know exactly what to expect, and you'll most likely be in love with what the Titan II has to offer — if you're on Team Android or iOS, however, this phone probably won't tempt you to switch sides unless you have an intense desire to take the camera for a spin.

With Mango comes a full suite of features, one of which is Internet Sharing — what Microsoft refers to as its mobile hotspot capability — and it's present and accounted for in the Titan II, giving you the opportunity to hook up to an AT&T tethering plan and share that 5GB of download capacity with five other devices.

The Titan II also comes with a few extra settings and apps that you won't find on every Windows Phone. First, the HTC Hub gives you your own customizable set of panels consisting of stocks, news, weather and featured apps. The Hub's first panel is the time and weather, and it lets you reminisce by using the stereotypical Sense-style weather widget at the top. Clicking on it takes you into an AccuWeather panel that highlights your local forecasts and other conditions.

Speaking of featured HTC apps, the Marketplace reserves a section specifically for manufacturer-made programs. Here you'll find a total of 15 apps, such as Tango video chat, Dock Mode, Converter,

Connected Media, Locations, Lists, Notes, Flashlight, Compass and more. You'll also find the Photo Enhancer app pre-loaded on the Titan II (which is uninstallable, if you'd prefer to get rid of it), which lets you choose any picture in your camera roll and add a filter to it — with 14 options available, you have plenty to pick from if you want to experiment a little.

Finally, there's also the usual litany of AT&T apps that everyone loves or hates: U-Verse Mobile, Navigator, Code Scanner, YPmobile, Radio and myWireless. If that's not enough carrier love for you, there are a few more available for downloading on the Marketplace, which leads us to ponder exactly why the included bloatware couldn't be accessed the exact same way. We suppose we shouldn't complain too much, however, since every last one of them can be uninstalled by simply long-pressing the selection on the app screen and choosing the correct action in the drop-down menu.

Wrap-Up

Overall, we have very few qualms with the HTC Titan II. Despite its clumsier design, it certainly has more to offer than its predecessor, which was already considered a great phone when it was released on AT&T a scant five months ago (six months if you count the European launch). But is there any reason to fork out $200 for a Windows Phone that has roughly the same feature set as the less expensive Nokia Lumia 900, which is getting subsidized beyond our wildest dreams? Unless you're a camera enthusiast, we think your money could be put to better use elsewhere.

Brad is a mobile editor at Engadget, an outdoorsy guy, and a lover of eccentric New Wave and electro. Singer and beatboxer.

BOTTOMLINE

HTC
Titan II (AT&T)

$200 on contract

PROS

- Camera is one of the best on the market
- Good performance
- Wonderful call and speaker quality
- Long battery life

CONS

- Microsoft limits the display resolution to WVGA
- Thicker and bulkier than its predecessor

The Titan II improves upon its predecessor in performance and image quality, but it's difficult to justify the premium price tag when AT&T's giving away another solid WP handset for free.

MAN AND MACHINE

MICROSOFT'S PRINCIPAL RESEARCHER, **BILL BUXTON,** ON THE FUTURE OF THE NATURAL UI

BY **DONALD MELANSON**

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BILL BUXTON HAS SPENT MOST OF HIS CAREER getting between humans and computers. While his initial focus was on music and digital instruments, that eventually led to an interest in human-computer interaction, and pioneering work with multitouch systems and other user interfaces. He worked with the famed hotbed of innovation Xerox PARC in the late 1980s and early 90s, and was later Chief Scientist for software firm Alias Wavefront before claiming the same title at SGI Inc. when that company acquired the former in 1995. After a time running his own Toronto-based design and consulting firm, he moved on to Microsoft Research in 2005, where he continues to serve as the organization's Principal Researcher.

We recently had a chance to pick his brain and get his thoughts on a range of issues, including the state of design at Microsoft, the future of natural user interfaces and whether we're really entering a "post-PC" era.

DO I WISH THAT WE WERE FURTHER ALONG, AND DOING EVEN MORE? OF COURSE... IT IS MY JOB TO BE IMPATIENT.

Your title at Microsoft is Principal Researcher. Can you explain a bit of what that entails? What is your day-to-day like? Perhaps the best way to describe work-a-day life is "varied." Within MSR, we have a fair bit of flexibility in terms of choosing how and where we spend our time. We all publish work in peer-reviewed scientific literature. I also spend a chunk of time interacting with different groups, often in other MSR labs — especially MSRC in Cambridge, UK and MSRA in Beijing as well as with the product groups on tech envisioning and problem solving. Finally, I spend a fair bit of time on outward-facing activities — speaking at conferences, visiting companies of interest, and especially engaging with students at various universities. My rule for success in such ventures is that I learn as much from the students and companies, as they do from me. I love this part of my job. (Actually, I love almost all of it!)

What's your assessment of the state of design at Microsoft these days? There have been pockets of design excellence within the company for years. The hardware group

that designs our mouse and keyboard products is just one. However, since Microsoft has traditionally been perceived as a software company, their designs have been frequently overlooked when people think about design at Microsoft.

But from the long-standing pockets is emerging a collective transition whereby design is joining technological excellence as a core value in the development of products and services. The emergence of the Metro design is a reflection of this; likewise the incorporation of technologies such as voice, touch and gesture and the pursuit of ever more "natural" ways of interacting with systems. Kinect is a great example of this. It is really interesting how many different parts of the company were touched in its development — a great reflection of how design and innovation are ever more permeating the culture of the company. The value and impact of this is reflected in the rapidity with which Kinect, and the speech and gestural modalities that it supports, have migrated to applications beyond games.

As always with design, this is a work in progress, since design is a moving target. Do I wish that we were further along, and doing even more? Of course. Anything else would lead to complacency — and, it is my job to be impatient. By the same token, I am extremely excited by the momentum gained over the past five years, and the potential that I see in the next five.

What do you think of the notion of the "post-PC" era? I have mixed feelings about the term and what is meant by it. As someone who worked with Mark Weiser on developing the notion of ubiquitous computing at Xerox PARC, I am prone to think of a future where, if you are aware of the computer, that is an indication of a failure of design. So, in that sense, I dream about the "post-computer era" — not because there are no more computers, but because they are so seamlessly and transparently integrated into the tools that we use in our lives that we lose consciousness of them as distinct entities. This is largely already the case in our automobiles, about 1/3 of the cost of which is in the embedded information systems (with all of the hot topics such as "sensor networks," "ambient intelligence," "distributed, parallel, real-time computing," etc.

THE PRINCIPAL IS IN
27 Years of Human-Computer Interaction in 5 Videos

1983

Etch - A Study in Marking-Based Interaction

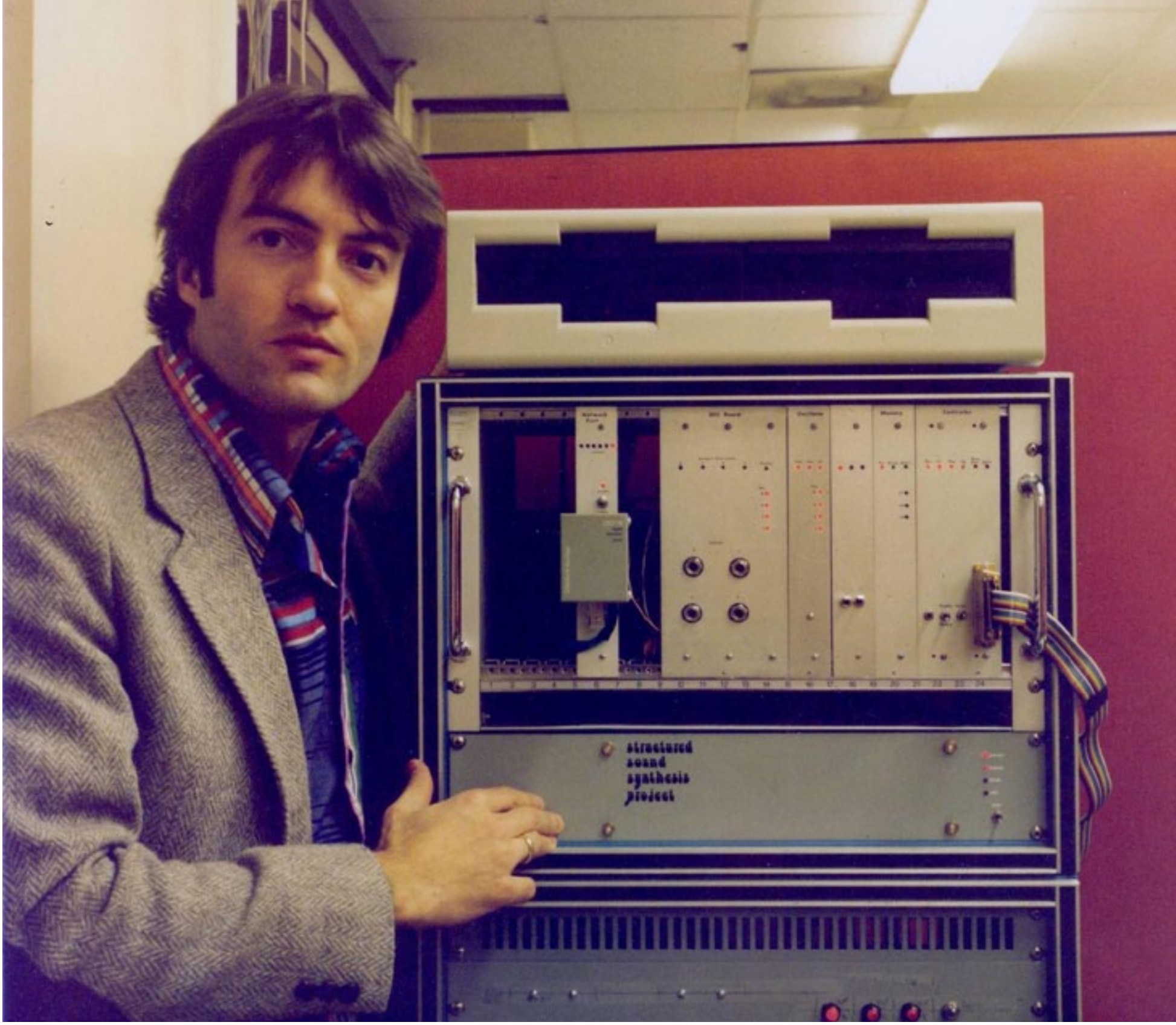
Buxton working on the digital music system. National Research Council of Canada, Ottawa, c. 1970.

1985

A Multi-Touch Three Dimensional Touch-Tablet

included), and where few of us know or care what processor is being used, how fast it is, what networking protocols are, or what the operating system is.

On the other hand, I often interpret talk about the "post-PC era" as implying a world where the desktop PC, with its keyboard and mouse, has disappeared. That, I think, is a misguided notion. In my analysis, what is happening with the emergence of new and varied form factors and classes of device is an augmentation of the overall eco-system, not one class of device rendering another obsolete. Of course, there will be some of that. But in general, that is not how things work. Cinema did not replace live theatre, nor television, cinema. Yes, each new technology may change the overall distribution of the market of "drama watchers," but in that case, for example, the overall market grew as well. Following my claim that everything is best for something and worst for something else, the desktop PC will continue to exist and develop for the many things for



Buxton with the SSSP digital sound synthesizer. University of Toronto, c. 1980.

which it is well suited, and other devices will take over from it for the things for which it is less well suited. That is all good, and what we have predicted since the early days when we first articulated the concept of ubiquitous computing.

What occupies my mind has less to do with the survival of any one of the ever-increasing classes of device. Rather, it is the question of how to make all of these devices work seamlessly and transparently together.

You've said that you expect Surface-like devices to eventually be in people's homes. Is that something you still see happening soon? If you contrast the size, cost and performance of the original Surface device with Surface 2.0, it

Collaborative design at a distance on the Active Desk. Ontario Telepresence Project, University of Toronto.

is clear that the trend points in that direction, and supports my contention. Large format displays are getting ever more affordable and higher performance. Tools for interacting with them, be they touch, stylus, voice and gesture (as with Kinect for Xbox 360), are offering ever more appropriate ways to go about doing so. And, Moore's law, advances in networking technology, coupled with the cloud suggest that the means are being put into place whereby new form factors will not only be affordable for the home (and office, and shop, and library ...) but also "play nice" with both users and the other technologies in the ecosystem. Making sure that what happens is a matter of research and design — something that we are seriously engaged in, which echoes back to your first question.

Are there areas that you think could benefit from natural user interfaces that haven't yet? I would say that we have just scratched the surface in this regard. We live in the physical world, and for a long time there was no digital world. Today we have some connections between the two worlds, but when we can truly blend them together, we get something completely new, something we are only now beginning to understand. This is why this is the most exciting time in my career since the first time I used a computer 41 years ago. Compared to what we have done in the past, what we can do today is fantastic. Compared to where we have the potential to be in 10 to 20 years, we still have a lot of work to do. We still work with computers. But reflecting what I said above, that is just a steppingstone to getting to the point where we are unaware that we are dealing with computers. As the saying goes, people don't want a hammer or nail, nor even a hole in the wall. They want their picture hanging on the wall at the spot where they want it. That is the high-order task. Every time you encounter an issue dealing with some intermediate step or tool in doing some higher order activity, that may well be an opportunity

1995

The Active Desk & Prototyping the Future

1999

Digital Tape Drawing

for a more natural, or appropriate means of accomplishing it.

In the future, neither the physical world nor the digital world will be sufficient by itself. The ability to translate your real-world experience metaphorically into the things that you want to do in the virtual world is key.

Are there any works of science fiction that have inspired your work? I confess that I have read only one science fiction book in my life — *Stranger in a Strange Land*. And, given that he is such a fan, I am really relieved that Rick Rashid, who founded Microsoft Research, still hired me knowing that I (still) have never seen a full episode of *Star Trek*, or any of the movies. I tend to read history. Sure I enjoyed films like *Tron*, *The Matrix*, *Terminator II*, etc., and not just because I used to work in the 3D software industry making tools for visual effects and animation. It is just that I have a really big library, and so many books that I am still dying to read, that science fiction has just not made the cut. And, actually, just so that it doesn't feel singled out, for the most part, I have stopped reading most fiction of any type over the past 15 years. Anyhow, my life is better than science fiction!

You've built up an impressive collection of gadgets over the years. Can you talk about some of your favorites? What drives you to collect them? Yes, I have been collecting interactive gadgets, and therefore much of the history of my craft, over the past 35 years or so. I never intended it to be a collection, per se. I just kept things that captured my interest — sometimes because they were so cool, and sometimes because they were so bad. What they all have in common is that they provide really valuable lessons about design. You can read about something, and understand the concept. But if you have a chance to actually experience it because you have the gadget, then your way of knowing is at a far deeper, visceral level.

The devices in my collection are not just about remembering, respecting and learning from the past. Pretty much every one of them teaches some lesson that is really relevant about the future. Take, for example, two watches that I have,

"... MY LIFE IS BETTER THAN SCIENCE FICTION!"

Buxton with friends, Bruce Mau and Harry Kroto, at the Massive Thinkers Forum, Art Gallery of Ontario. Toronto, May 2005.

both from Casio: the AT-550 and the DB-1000 TeleMemo. Each had a capacitive touch screen covering the entire crystal, and rather than using the touchscreen to touch virtual buttons, one entered data into the watch by writing characters with your finger on the touch-sensitive crystal. Yes! They had built-in character recognition. The AT-550 was a calculator watch on which you printed numbers and arithmetic operators, and the DB-1000 did that, and had an address book as well, so it could recognize both numeric and arithmetic characters. That is, in this age of texting, Twitter and touchscreens, these watches teach us an eyes-free, heads-up method to enter text into our mobile devices. It is a way that lets me look at the address or phone number on a piece of paper while I copy it into my phone; or a way that I can tweet about a lecture while keeping my eyes on the speaker and the slides. Of course, this is only true if designers knew about them *and* appreciated their lessons.

Now here is the kicker: these watches were available commercially in 1984 — the year that the first Macintosh came out — and they sold for under $100. Now think about it: this was over 19 Moore's Laws ago, a factor of over 262,144. What these devices teach me is humility. Rather than puffing out our collective chests as to how well we are doing,

I SEE A SHIFT TO A PLACE WHERE WE WON'T BE DAZZLED JUST BECAUSE A PRODUCT IS WELL DESIGNED AND WORKS WELL.

they really beg the question, "What have you, as an industry, been doing for the past 20 years? You can, and you should, do better!" My collection keeps me honest.

What do you see being the biggest trends in technology over the next three to five years? I see a shift to a place where we won't be dazzled just because a product is well designed and works well. Our collective customers should be able to take that for granted, and it is our job to make it so. But that is not enough. The problems of design and complexity do not go away, even if we all surpass that bar. Rather, they just move to a different place: the complexity that is emerging in terms of how all of these (individually) easy to use devices work together. We need a comprehensive ecosystem that combines elements of each to produce an integrated set of experiences for people, so they don't have to manage each of the underlying separate devices.

The challenge and the target trend is in the direction where every device and service you acquire not only delivers great value and experience on its own, but that value and quality of experience is enhanced by every other product and service that you already have, and each of them enhance that which you just acquired. And, in the process, by adding more of the right technology, we end up with an overall reduction in complexity for our users.

Let me conclude with one existence proof: my car and my phone. Each works just fine on its own. But when I jump in the car with my phone, seamlessly, they couple and Windows Phone 7 no longer presents a Metro design (if it did, and I used it while driving, I should lose my driver's license). If I get a text, it is read to me. If I want to reply, I just dictate it. If the phone rings, the stereo is turned down and becomes a speaker phone. If I park before the call is over, I just turn the car off, pick up the phone and the conversation makes a seamless transition to the hand-set. I want all of my devices to have this same capability to seamlessly and transparently aggregate and disaggregate — and I believe that it will happen. Helping make it happen, in an appropriate manner is, in fact, my job. And I love it.

2010

Project Gustav - Buxton's MIX10 Keynote

IN REAL LIFE

Welcome to IRL, an ongoing feature where we talk about the gadgets, apps and toys we're using in real life and take a second look at products that already got the formal review treatment.

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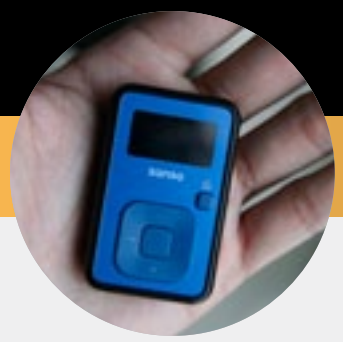
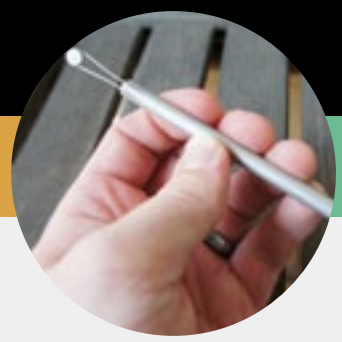
2. 

3. 

oStylus Dot, Sansa Clip+ and SanDisk's Extreme Pro 128GB CompactFlash Card

BY ENGADGET STAFF

This week's IRL is a quirky mix of vintage and modern, with Billy getting comfy with a new iPad stylus and Jason clinging to the Sansa Clip+ player he's owned since 2009. Rounding things out, Darren's decided to put all his digital media in one proverbial basket: a 128GB CompactFlash card.

SanDisk ExtremePro 128GB CompactFlash Card

For my Nikon D3S, there's nothing else I'd shove into its pair of CF slots than an Extreme Pro card from SanDisk, but even I was a little taken aback upon hearing that SanDisk was crafting one with *one hundred and twenty-eight*

gigabytes of storage. My typical setup is a pair of 32GB cards, and I've had absolutely zero issue shooting nine frames per second in RAW while capturing my wife leaping off of a cliff in Kauai (good times, good times). But the 128GB version is actually slightly speedier (rated at 100MB/s), and for pro shooters picking up the D4 instead, it suddenly makes a lot more sense than it did on Nikon's prior flagship.

The D4 only has a single CompactFlash slot; the other one is that snazzy new XQD format. On the D3S, you're better off buying a pair of 64GB ExtremePro cards, but if you're going to be doing an awful lot of 1080p shooting on the newer D4, being able to handle 128GB of content on a single card is a serious boon — particularly for off-the-grid projects where it's just not convenient to dump your card after every day.

Make no mistake: the 128GB Extreme-Pro is by no means affordable. It's currently selling for just under $800, while a 64GB Extreme Pro can be easily had for $190. That said, it handles 11fps rapid shooting on the D4 with poise, and in fact, you'll be hard-pressed to find a device that accepts CF capable of overwhelming it. To be frank, this is hardly a consumer card, but pros who capture gigabytes on end in order to put food on the table will absolutely love it. (In a year or so, when it's half as costly.)
— Darren Murph

Sansa Clip+

As someone who once rocked the waffle maker of portable music players — the Sony Discman — my iPod Video didn't look that big to me when I bought it in 2005. By 2009, though, I was on the hunt for a more compact player that would

free up some pocket space. At the time, I decided not to get another “i” gadget — the iPod nano was still a bit too big, while the iPod shuffle’s user interface was just, well, I’m not gonna go there, okay? Instead, I opted for the Sansa Clip+, which offered a robust feature set and attractive price, too. For starters, I wanted something with a screen for browsing and selecting music. That, combined with the player’s small size and clip made this guy an ideal companion for flights and the occasional venture into the great outdoors.

The sound quality is quite good and can be tweaked via several preset settings or the built-in custom equalizer. Getting music into the device is also a cinch — I can just drag and drop stuff like I would with an external hard drive. Otherwise, I can use Windows Media Player to sync libraries or create custom playlists. Additional listening options include an FM radio and compatibility with subscription services like Rhapsody. It even comes with a voice recorder, which is always a nice backup to have in case my regular recorder fails when I have to do interviews for my reporting job. Built-in storage ranges from 2GB to 8GB and that can be further expanded via the built-in microSD card slot.

Unfortunately, a relative who shall remain nameless (you know who you are!) accidentally stepped on my defenseless little blue player sometime last year. Now, my Sansa Clip+ is sans clip, with reduced volume when I con-

nect it to an external speaker. It still sounds good with headphones, though, so I've decided to stick with the little bugger. The only difference now is that it goes inside my pocket instead of clipping onto it. *— Jason Hidalgo*

oStylus Dot

If you've been reading Engadget long enough, you might recall that time we took the previous model of the oStylus for a spin. Now, the outfit's released a new model, the Dot, which naturally brings various improvements. I use it mostly just to scribble down notes and do some sketching on the iPad, though it also makes for a nice tool when combined with the Magic Trackpad — especially useful for navigating alongside Photoshop brushes. You know, if a Wacom tablet just isn't in the cards. Overall, the oStylus feels great in the hand. It really is the perfect size for an accessory that's meant to be used like a pen or brush. With the latest effort, the company has made the head smaller, which makes navigation on mobile devices that much easier.

However, the open metal ring on the end is now a closed dot (hence the name), and it still isn't fully covered in that protective white material. This means that anywhere on the input end (edges) is off limits except for the coated bottom portion. More times than not, when sketching rough ideas for a logo project, I feel like I'm scratching the screen of my iPad. So far, there hasn't been any noticeable damage, but it feels like there is, and that always makes me a tad uneasy. Other than that, the oStylus works great. Input is a breeze and I never struggle to make the iPad and capacitive pen play nicely together. At around $35, it's priced on par with other styli, but with a more unique experience. Hopefully you don't mind a little scratch anxiety from time to time. *— Billy Steele*

THE FACE OF DIGITALREV TV LOOKS BACK ON THE DAYS OF 16-BIT GAMING, AND LETS LOOSE ON 3D GIMMICKRY.

KAI MAN WONG

Q&A

What gadget do you depend on most? I think my iPhone is the most used gadget that I have. I'm always out filming, so my phone helps me keep in contact with people, keep myself informed, keep my life together and entertained. It's like an electronic Swiss army knife that converges all these cool, useful things into the palm of your hand. And I am always clutching it in my hand like it's been super-glued there.

Which do you look back upon most fondly? 16-bit games consoles. I took a shine to the SNES more than the Sega Megadrive, but I was a lucky little bugger that had both of them, which meant that all the other kids in my class wanted to come 'round my house to play on both of my consoles. But it wasn't the false sense of popularity that made having these couple of consoles so great, it was the consumption of this cool new culture that was becoming quite mainstream. The games were innovative and evolved as I grew up: when I got into 16-bit gaming I was pushing buttons to make an (on-screen) Italian plumber eat mushrooms and by the time we were getting towards 32-bit gaming, those same buttons were being pushed to rip a pajama-wearing man's head off with the spinal column still attached and swinging about like a string of sausages. It was a culture for the youth of the time that inevitably made parents frown and tut at how bad video games are and the youth in general. Brilliant.

What is your operating system of choice? iOS, just because it's so slick and easy to use. Otherwise it's OS X on the Mac. I've done the Windows thing and I just can't imagine going back to that.

What are your favorite gadget names? Snappy, memorable names with no more than two or three syllables: iPod, iPhone, D4, M9. PlayStation. It's great when the name describes what the product is. Camera names don't often have any implication of what they do or specialise in. Mind you, they would probably sound silly if they were called the "Nikon Noise Reducer" or the "Canon Multi-Media Camera". Or maybe I'm just really bad at making-up product names.

What are your least favorite? Names that use "3D" or "360" in them. I can't stand names with "X" and "Z" either because they sound naff. With that in mind, the Xbox 360 is probably the worst name of them all for any kind of electronic product.

A perfect device would be one that requires absolutely no thinking to operate. I can sit on my sofa like some salivating zombie, pressing one button or touching a screen that is so intuitive that my brain has slowly withered away and been replaced with artificial intelligence.

Also, it makes it sound like an adult pleasuring toy that has a function that makes it rotate 360-degrees.

Which app do you depend on most? For the iPhone, probably mail or messages. A lot of the times I prefer to communicate that way. On the Mac, I use Aperture a heck of a lot. Before, I would only use Photoshop, but Aperture is enough for most purposes. I'm not into 'shopping people's faces onto the body of a better looking body, just little tweaks, and I think Aperture has the perfect interface for quick editing and convenient organization of your files.

What is your idea of the perfect device?

ANSWER

What is your earliest gadget memory? BBC Micro. I remember playing these classic games on it using the keyboard to control the on-screen characters. We didn't have a joystick. My Dad also had this book that had instructions on how to program a number of games. I remember that it took quite a bit of time for me to type in the code and there would often be mistakes when you try to run it. It's quite funny to think about how primitive those games were, also.

What technological advancement do you most admire? The computer chip. The internet is another good one but without those chips we wouldn't have all these amazing gadgets around

Which do you most despise? 3-D. Well, I mainly hate the way it has been marketed and used this time 'round. It's almost like they can pump out any crap movie and slap "3-D" under the title to make us watch it. I want to watch movies with a plot, not see some glorified amusement ride. Of course, some movies will be interesting in 3-D, but generally I think this 3-D malarkey is a load of tripe. They've marketed it as if it will make the movie-watching process much more entertaining but in reality it's just a load of twaddle that costs more to watch, makes your eye sight go all funny and want to throw up in your popcorn after a couple of hours of watching blue people rush about the screen (*Avatar*, not *The Smurfs*). The re-releases of old films in 3-D is mostly ridiculous too. *Titanic* in 3-D? Hmmmm.

What fault are you most tolerant of in a gadget? Cables. I absolutely hate it when there's a load of messy cables hanging out the back of a gadget. But it doesn't make a product rubbish. It's just nice when the product is designed to make the cables look neater, like with the iMac.

Which are you most intolerant of? Error messages. Things not working. Sluggishness. I can understand that machines can't always work well but it's still no less infuriating when they don't work for you.

What device do you covet most? Leica M9 Titanium. It is quite literally the sexiest thing that you shouldn't be relating "sex" to. It is beautiful. But I'll never buy one. If I had one, it would probably end up being kept in a display cabinet. I've already got an M9 so I'll just keep coveting it.

What does being connected mean to you? It means a hell of a lot when my job involves being on the internet a lot. I can't believe that I vowed that I didn't need a smartphone just a couple of years ago.

When are you least likely to reply to an email? When I'm asleep; when I'm filming; when I'm on holiday. Sometimes it feels good to just switch off. There are times when you just have to, otherwise you won't enjoy the thing that you are supposed to be enjoying, rather than fiddling about trying to get through all those emails.

When did you last disconnect? I'm going on holiday tomorrow, so that's when I'll be disconnecting.

The Last Word - Box Brown

engadget distro

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